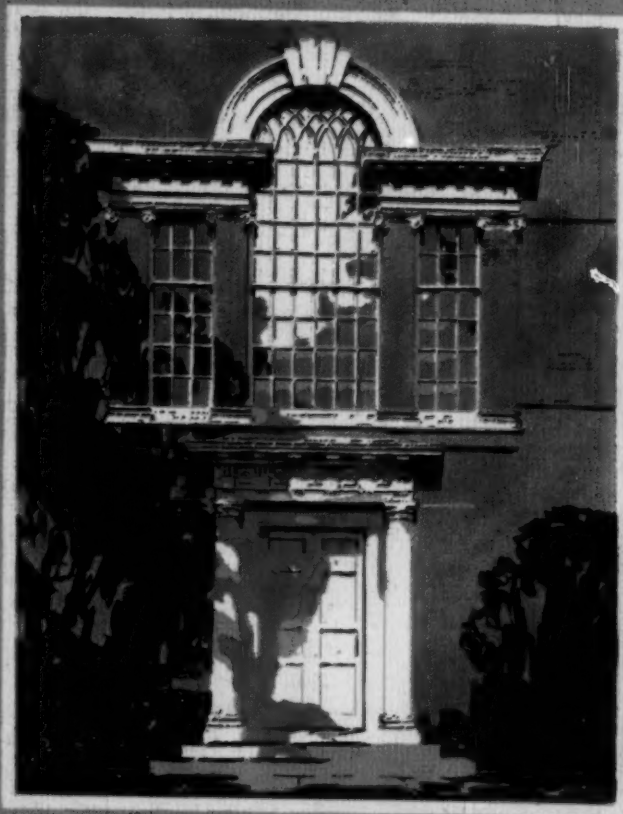
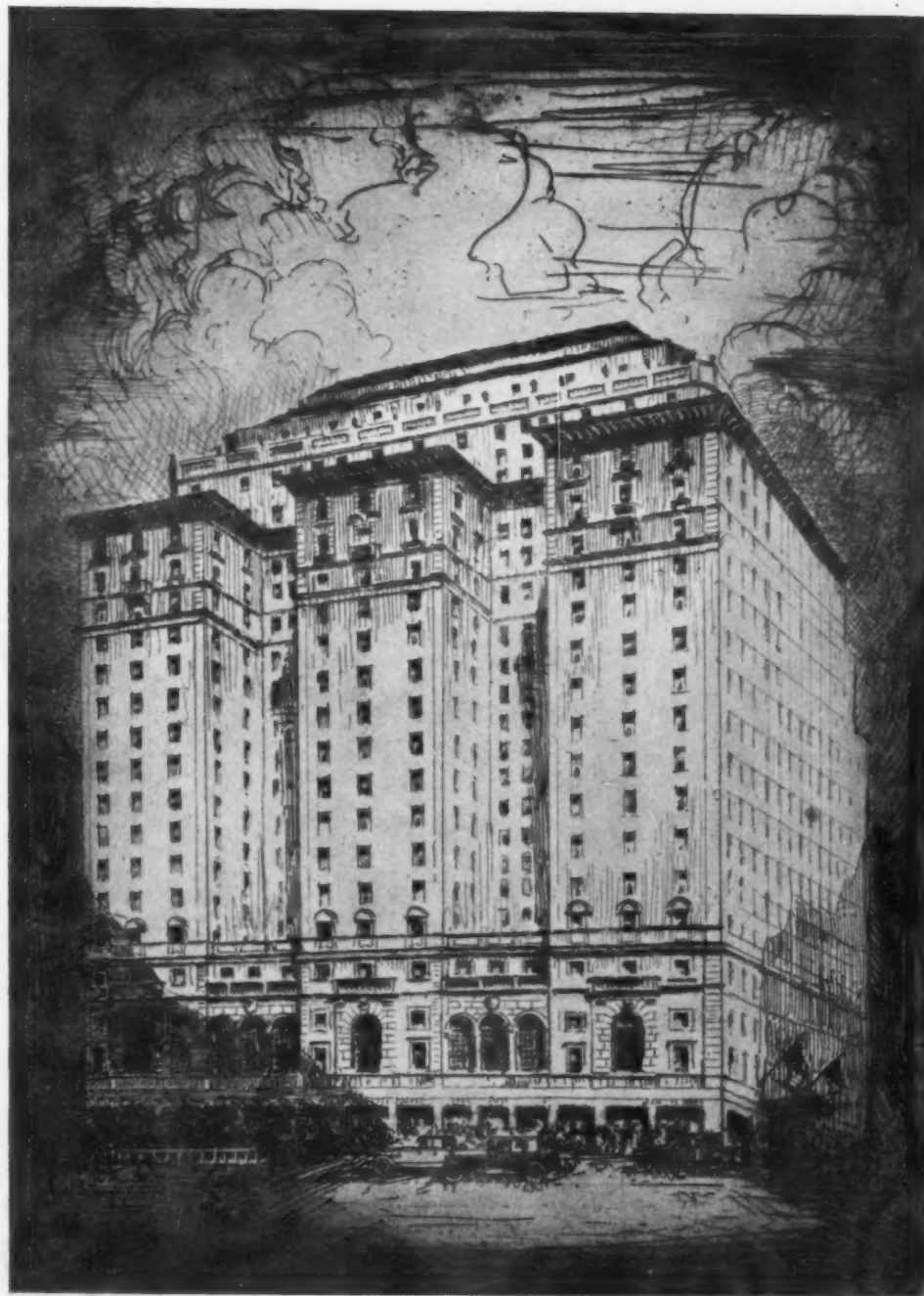


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ROOSEVELT HOTEL, NEW YORK
FROM AN ETCHING BY RALPH SHEPARD

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The New Arrowhead Inn

DWIGHT JAMES BAUM, Architect

By MATLACK PRICE

IN the country outside Rome the Italians of the Renaissance built themselves great villas and gardens as places of retreat and refreshment, away from the stress of the city. Rome itself, in those days, could have imposed less pressure on its dwellers than one of our own suburbs of today, and it is doubtful if the most imaginative of the Renaissance Italians could have conceived of the pressure under which the present-day dweller in New York lives,—unless it were Dante, when he wrote the *Inferno*.

History, both human and architectural, inevitably repeats itself, so here, within half an hour from the heart of New York, a gracious and restful Italian villa has been built for Benjamin C. Riley, as a restaurant de luxe—the new “Arrowhead Inn”—by Dwight James Baum, Architect. Proprietor and architect, certainly, have joined in accord to good purpose, for this great Italian villa is successful in the only two ways in which such a building needs to be successful,—it is attractive and practical. It is attractive because it is designed with skill and imagination, in an essentially picturesque style of

architecture; and it is practical because it is designed with intelligence and a thorough grasp of the special problems involved in a building of its type.

More than these two architectural points, the picturesque and the practical, the enlistment of architecture in providing a setting for dining de luxe has definitely proved to be good business. This I have on the personal testimony of Mr. Riley himself, who has been in the business of managing an out-of-town restaurant for 17 years. In spite of the well known public indifference to architecture, good or bad (an indifference which every architect has felt at one time or another), Mr. Riley told me that a great many people had commented on the architectural setting he had provided for them, when, in former days, they used only to comment on the meals. And, largely by reason of this new and attractive environment, he expects to keep “Arrowhead Inn” open all winter, and to have a patronage that will make it worth while to do so.

Even a brief analysis will serve to show how the architect achieved a successful building in conformity with the necessarily special requirements



Architect's Rendering of Building and Gardens



THE GARDEN FRONT OF THE INN WITH ITS HIGH STONE TERRACE AND BROAD STEPS



THE PAVED DANCE FLOOR ON THE EASTERN LAWN

THE NEW ARROWHEAD INN

DWIGHT JAMES BAUM, ARCHITECT

involved. "Arrowhead Inn," built on a generous though not unlimited expenditure, seems to prove that economy of architectural means is by no means always a handicap, but may act as a stimulus when vision and resourcefulness are among the attributes of the architect. I think it could be made a demonstrable theory that economy of means forces the hand of the architect to make the most of every architectural opportunity afforded by the whole project, and thus makes for the attainment of strictly architectural values, rather than values resultant from superficial means, such as the use of showy materials, or from the mere profusion which an extravagant outlay can command.

The first architectural asset in the design of "Arrowhead Inn" was, obviously, its site, a commanding knoll of wooded land, broken with picturesque outcroppings of gray ledge rock. A raised site naturally aids the impressiveness of any building, and here the architect developed the design to express an effect of mass, made picturesque by his device of two towers of differing breadths and heights, differently treated. These serve to interrupt what would otherwise have been a monotony of horizontal roof lines and arched windows, and effect at the same time an interesting lack of symmetry in the whole composition.

The immediate foreground of the building, at present uncompleted, will consist of formal Italian

garden terraces, with stairways and balustrades,—an outdoor eating environment of unusual attractiveness. With gay awnings and Deauville umbrella tables by day, and soft lighting effects by night, the whole outdoor aspect of the Inn will possess a truly Continental glamor, and as compared with provision for the 950 guests served on the temporary terrace this past summer, accommodation is being made for 1500 or more next summer, with *al fresco* entertainment as an attraction added to the present outdoor dance floor. This floor, by the way, is made of squares of alternating colors, waxed, the same material being used for the interior floors of the lobby and dining rooms.

The main mass of "Arrowhead Inn" is approximately 200 feet square, of hollow tile construction with cream-yellow stucco and roofs of handmade Italian tile in a range of dull reds. This roof distinctly escapes the mechanical effect of many roofs of its type, and is equaled in character only by a few in southern California.

The Italian villa, as an architectural type, has served most often in this country as a basis for the design of country houses, notably the fine and scholarly examples by Charles A. Platt. Seldom has it been utilized as Mr. Baum has adapted it for "Arrowhead Inn." The villa style in its simpler forms, not considering the Baroque elaborations of the later Renaissance, is peculiarly adaptable both in



One Corner of the Women's Reception Room



Entrance from the Lobby into the South Dining Room

its essentials of design and of construction.

In its design this type of Italian architecture demands, primarily, good proportion in its masses and in its large, plain wall areas. It demands no great profusion of detail, but requires good judgment in the allocation of detail and the best possible sense of scale in its execution. The effectiveness of "Arrowhead Inn," certainly, does not depend on its detail, but upon its general proportions, and the relation of its main masses. Its front elevation possesses balance without symmetry. Between the two towers there is enough difference to emphasize this point as the center of the building, but not to the extent of throwing the long wings out of keeping. The close spacing of the three arched doors opening on the terrace from the lobby, and the deep shadow in the loggia above them accomplish all that is necessary at this point in the main facade. To have repeated the balcony and window of the right-hand tower on the tower at the left would have been to force an unnecessary symmetry.

In point of color this villa architecture may be carried out with as much or as little as may be required. In much of the recent work in Miami, in Florida, the architects have been mixing mineral pigments very liberally with the stucco, obtaining highly colorful results. A stucco exterior, at one time, was considered rather colorless and uninteresting, but its more recent developments have shown that it may be rich in color and interesting in texture.



A Spacious Lobby, Vaulted in the Italian Style, Occupies the Center of the Entrance Floor

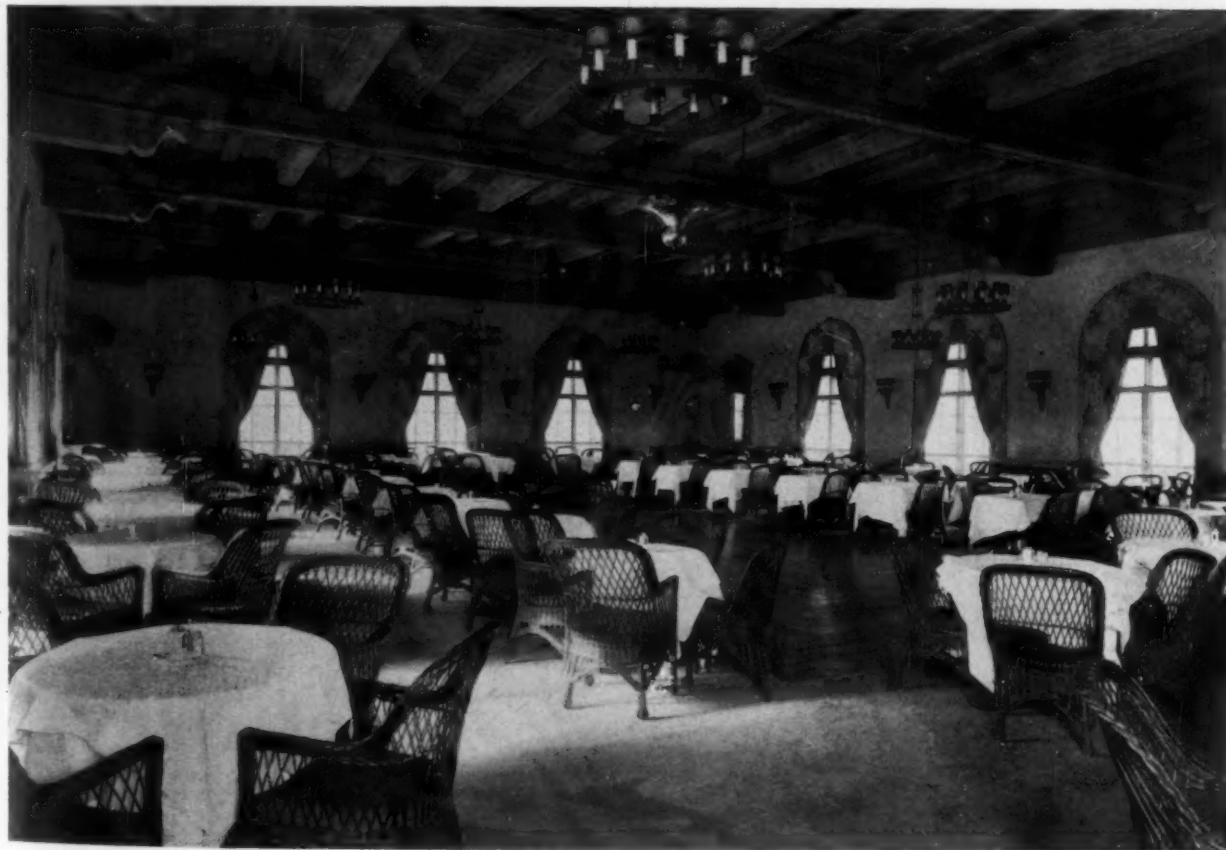
In the "Arrowhead Inn" exterior stucco, no color effect beyond a rich cream has been attempted, and the texture is interestingly rough without being exaggerated. This raises the point of technique, which is a very important matter in the rendering of Italian architecture, and one in which many examples in this country have conspicuously failed. Even with excellent general proportions, a building that purports to be in the villa style of Renaissance Italy entirely misses its effect if its execution in detail is hard or mechanical. An easy quality of informality is quite as important as the scholarly element, —perhaps it is more important. Recent analyses of the work of some of the great Renaissance architects, especially of the work of those who have written treatises on architecture, with pedantic rules and formulæ, have shown that they themselves paid little or no attention to the rules when the rules interfered with the thing they wanted to do.

It is the quality of informality that contributes greatly to the success of "Arrowhead Inn," making it not only good design in itself, but fitting and appropriate for its purpose as well. The same general scheme carried out unimaginatively and with any degree of self-consciousness would have missed the effect that has been so successfully attained here.

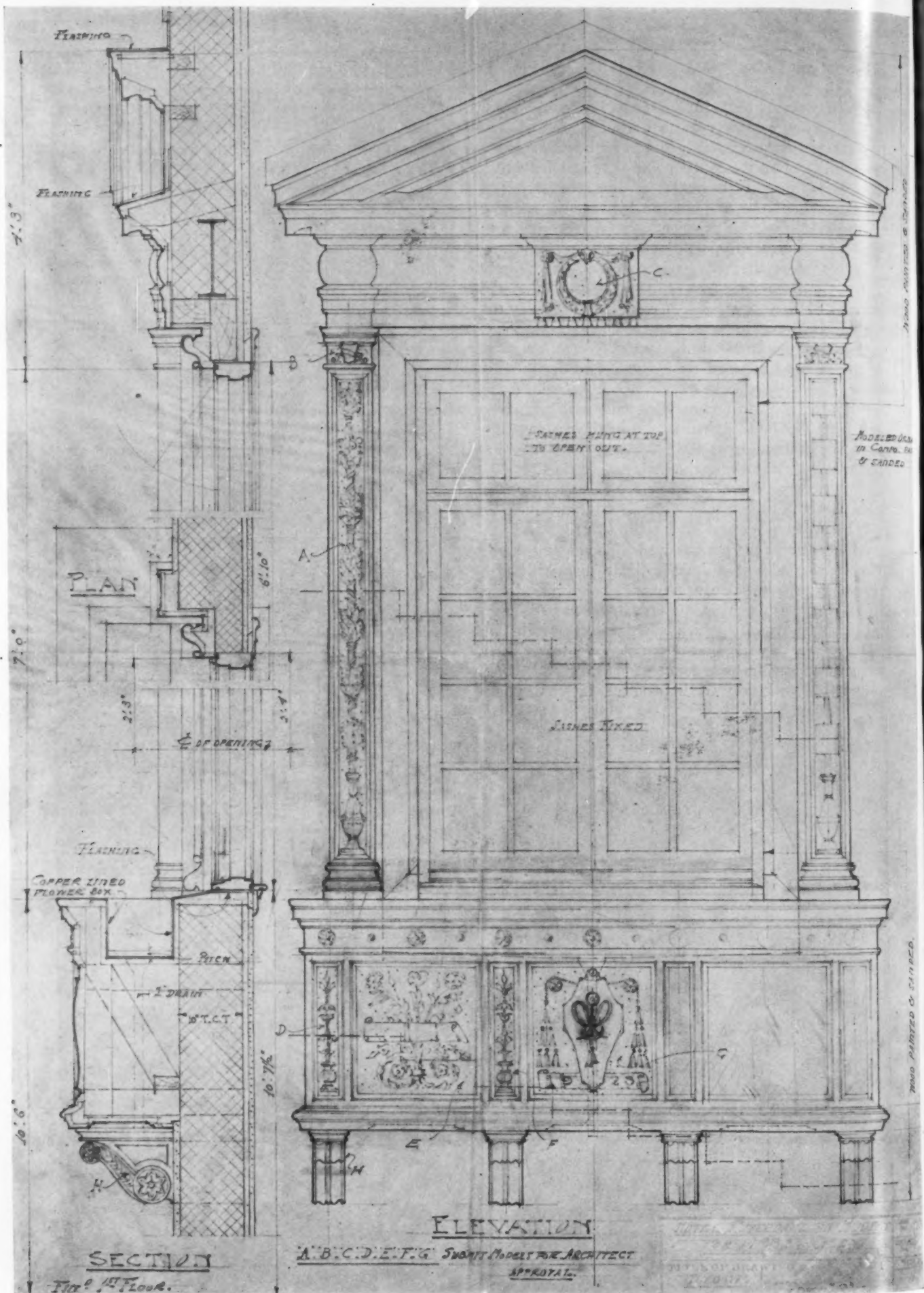
One problem with which the architects of Italian villas of the Renaissance did not have to concern themselves was the provision of parking space for automobiles,—a very real problem in connection



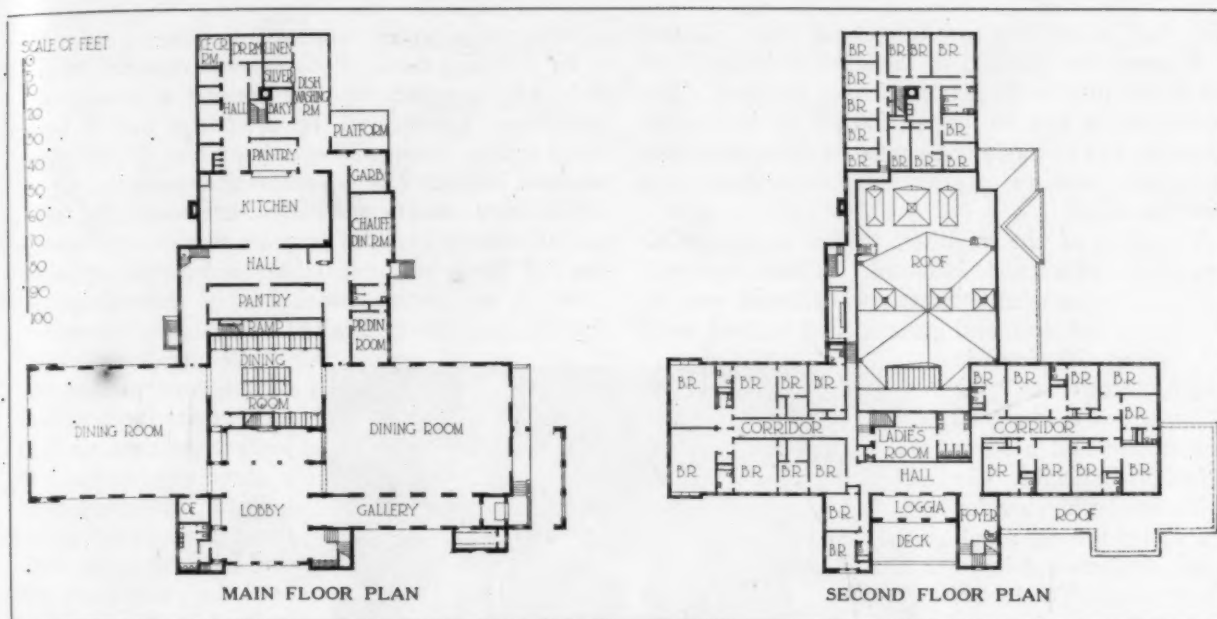
The Long Entrance Corridor



The Northern Dining Room Is Provided with a Dancing Floor About Which the Tables Are Grouped



SCALE DETAIL OF THE FLORENTINE WINDOW AND BALCONY, NEW ARROWHEAD INN
DWIGHT JAMES BAUM, ARCHITECT



THE ARCADED ENTRANCE AT THE NORTHERN END SHOWS THE FINE ITALIAN SPIRIT OF THE DESIGN

NEW ARROWHEAD INN, NEW YORK

DWIGHT JAMES BAUM, ARCHITECT

with such a building as "Arrowhead Inn." Extensive space was planned in the general layout here, but it will need to be increased next summer. This expansion is not to be attributed to inadequate planning, but to modesty as regards the restaurant's popularity and to greater patronage than was anticipated.

The plan of the building, so far as the public spaces are concerned, is simple. From the *porte cochere*, through an interestingly detailed pair of doors of wood, iron and glass, a long vaulted corridor, about 70 feet in length, leads to the lobby, which is about 50 feet square and a story and a half in height. The walls in both corridor and lobby are of rough textured plaster, colored a warm buff. The lobby, lying between the two large dining rooms, contains the office accommodation and space for the orchestra, and because of its almost complete absence of architectural detail it depends for its effect upon such purely architectural points as proportion and the treatment of its windows and other openings, which are excellently managed.

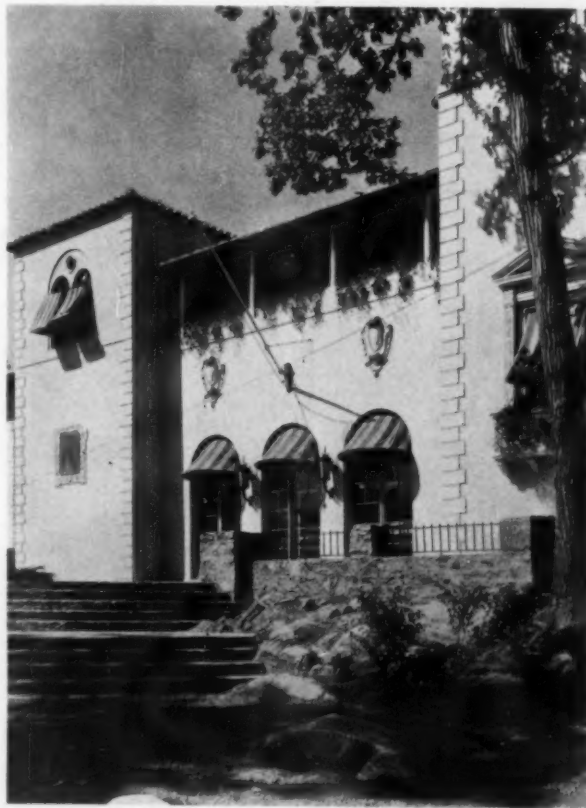
The walls of the two large restaurants are finished with the same rough plaster effect as the corridor and lobby, and both restaurants have ceilings of pecky cypress, very simply detailed and given an antique finish, later to be embellished with a little decoration in color, in the Italian or Spanish manner. The commendable thing about the dining rooms, as about the whole atmosphere of the place, is the restful, satisfying simplicity of its architecture, both outside and in. There has been no striving for superficial effects, and the result is an environment that cannot but be appreciated as a real escape from the insistent profusion of most city interiors, and of the whole feeling of the city, which, in this great, quiet villa, seems as though it must be at least a hundred miles away.

Connecting the two restaurants, behind the lobby, lies a third and smaller restaurant where 20 couples can dine in semi-privacy in booths. Each booth or alcove has its Italian table, and high-backed seats, covered with leather which is studded with bronze nails. This small restaurant has its own dance floor, and its chief architectural feature is its vaulted

plaster ceiling which confers distinguished character.

In planning the kitchens it was necessary to provide adequate facilities for serving a considerable number of guests, and the equipment had to be as large and as complete as that of one of our great modern hotels. The kitchens and pantries, all of which have outside ventilation, are unusually large, and the layout includes separate refrigeration rooms for all kinds of perishable foods, special pastry pantries, ice cream rooms, supply storerooms and linen rooms. Every detail of convenience is provided.

The greatest problem of all, however, in laying out the kitchens was to arrange them so that a three-way service, to both the restaurants and the terrace out doors, could be managed without the confusion of waiters or guests crossing one another's paths. The proprietor, with years of restaurant experience behind him, admitted that he had never been able to see how a three-way, non-colliding service from one kitchen could be worked out; the architect's solution was to place the kitchen between the two large dining rooms, an obvious expedient; and to serve the terrace through a tunnel, an expedient not so obvious—in fact, highly ingenious; the result is an arrangement by which neither patrons



An Open Loggia Emphasizes the Center of the East Facade

nor waiters can ever cross one another's paths.

"Arrowhead Inn" is entirely a restaurant, the apartments on the second floor being the private residence of the proprietor and his family. Its atmosphere, unlike that of many similar places, is pleasantly like that of a large country house or club. It is refreshingly un-metropolitan and un-urban, and in spite of its large scale it succeeds in giving a feeling of privacy and exclusiveness. For this the credit is due to architecture and the architect, and it constitutes much of the latter's real reward for not only doing all that the problem required, but a good deal more. Far too often this type of building entirely fails to realize its architectural opportunity. "Arrowhead Inn" not only realizes its architectural opportunity but improves upon it.

"Arrowhead Inn" may well come to be cited as a specific and definite proof that good architecture is a good business investment, a truth which, to many materialists seems to need such demonstrations.

The Roosevelt Hotel, New York

GEORGE B. POST & SONS, Architects

ANOTHER great hotel has been added to the so-called "Grand Central group" in the heart of New York. This great hostelry of 1100 rooms, which rises to a height of 22 stories above the street, has been named "The Roosevelt" in honor of the renowned late president.

The exterior, which is designed in a modified type of Italian Renaissance architecture, is constructed of Indiana limestone with terra cotta trimmings, except at the street level where the first story, containing numerous shops, has been emphasized by the use of Belgian Black, and black and white Grand Antique marble imported from the south of France. This treatment makes an effective enframing for the shops which fill three of the fronts of the building, but prevents a uniform and consistent architectural treatment of the facades from the sidewalk to the cornice lines. The facades, with their deep setbacks on the Madison and Park Avenue sides, rise to a height of 17 stories before the first cornice line is reached. Even this height is broken on the Park Avenue side, where lower setbacks occur on the 11th and 14th floor levels. The Roosevelt is the first large New York hotel to be built since the going into effect of the zoning law, which has produced what is known as the setback type of architecture. Beginning on the 16th floor, due to these setbacks, many of the guest rooms open out on individual roof gardens, an attractive feature which no other city hotel has yet been able to offer to its guests. Each little roof garden will be given the necessary privacy by latticed screening, over which vines will climb in summer, and gay colored awnings, tea tables and easy chairs will add to the comfort and gayety of these little gardens.

The plan of no modern hotel has been more carefully studied from the point of view of completeness of equipment and convenience of arrangement than has that of The Roosevelt. No detail which could possibly add to the comfort or convenience of the guests has been omitted. From the point of view of investment the plan has also been thoroughly developed, as is demonstrated by the arrangement of stores on the three street sides of the ground floor which open also upon the interior arcades. These hotel shops will therefore serve not only the public from the sidewalks but also the hotel guests from the interior corridors. A large proportion of the ground floor area has been devoted to store space, yet this has been accomplished without any sacrifice in the disposition of the public rooms. The relation of all the public rooms throughout the first three floors is in accord with modern metropolitan hotel requirements.

A study of the hotel plan, floor by floor, discloses these arrangements. Three subcellars are located

under the Madison Avenue side of the hotel and extend back as far as the trackage space of the Grand Central Terminal permits. The eastern half of the hotel, which is built over the incoming tracks, has no subcellars, the ground floor being the first floor entirely covering the block bounded by the four streets upon which the hotel fronts. In the lowest of the subcellars are located the engine room, with its refrigeration and power plants, and a complete laundry for the hotel and its guests. This laundry is connected with the hotel proper by a chute through which linen can be sent down directly from any floor of the hotel. In this subcellar is also located a large incinerator which likewise connects by a chute with all the floors. The second subcellar is devoted to the steward's department. Here all goods for the hotel are received, stored and distributed. Eight refrigerators, one each for fish, meat, fruit, smoked meat, poultry, butter and milk, cheese and vegetables, insure sanitary storage of food. Other features of this floor are an ice cutting machine, where fancy table forms will be made, an ice cream room for the moulding of frozen table decorations and desserts, a bakery with two ovens to produce the daily supply of various kinds of bread and rolls required, storage room for silver, linen, etc.; a large room with labeled racks for trunk storage, and a mechanical workshop for engineers, plumbers, steam fitters and electricians complete the equipment of this floor. The first basement or subcellar below the street level contains storage space for some of the shops above, kitchens and cafeteria for the hotel servants, locker rooms and other service features.

In addition to the 18 shops on the ground floor, there is located on the Vanderbilt Avenue side of the hotel a restaurant or grill with center dancing floor, around which a low balcony or terrace with wrought iron handrail provides a pleasant place for dinner or supper for those who enjoy dancing. Serving this restaurant are the pantry and service halls and elevators which connect with the main kitchen of the hotel on the floor directly above. On this ground floor are the two main entrances to the hotel. From these entrances the main floor is reached by monumental stairways, and the shops and grill room by long arcades which extend through to 46th Street and Vanderbilt Avenue. "The Mayflower Grill," so-called, is designed in the Colonial style, and is interestingly lighted by chandeliers and wall brackets in keeping. The main floor, upon which are arranged all the principal public rooms of the hotel with the exception of the ballroom suite, shows a consistent and intelligent arrangement of rooms along the three principal street sides of the building. Broad, easy stairways lead from the

entrance vestibules on 45th Street and 46th Street up to the main lobby, which occupies the center of the front part of this floor. In this lobby are located the main offices on one side and the six passenger elevators directly opposite. On the Madison Avenue side, parallel with this lobby and raised a few steps above it, extends a long, narrow lounge. Over the entrance vestibule on the 45th Street side is the oval Palm Room, which serves as a foyer or reception room for the large, formal dining room at the southeast corner of this floor. Stateliness and dignity have been given to this dining room by the height of the ceiling (the room extends through two stories) and by raising the floor three steps above that of the Palm Room.

One of the delightful and artistic features of this hotel is obtained by the many different levels of the public rooms. At the northeast corner of this main floor are located two breakfast rooms which also are on a higher level than the main lobby, necessitating an approach of several steps. The public rooms of this floor encircle and surround, in a U-shaped plan, the large main kitchen with its various pantries and service rooms. From this floor also, by means of a long staircase, the underground corridor is reached, connecting The Roosevelt with the Grand Central Station.

As the main lobby, the Palm Room and the large dining room, are two stories in height, only

three-quarters of the mezzanine or ballroom floor above is available for rooms. Over the main kitchen and connecting with it by a large service pantry is the ballroom with its adjacent foyer and small banquet room. With this ballroom suite are connected six private dining rooms and a spacious library along the 46th Street side. This excellent plan makes it possible for many private dinners to be held in connection with any entertainment in the ballroom. On the Madison Avenue side of this floor are located a beauty parlor for women, a dressing room, toilets, and a large barber shop. The location of the kitchen is particularly practical and logical. Located in the center of the eastern side or rear of the hotel, it serves not only the grill on the basement floor, which is directly below it, and the main dining room and breakfast rooms which are located on either side of it on the main floor, but also the ballroom suite and private dining rooms on the mezzanine floor above. This centralization of the culinary department is one of the most interesting and practical features of The Roosevelt's plan.

There are no long flights of stairs for waiters to climb, and all of the rooms have daylight and fresh air, unusual with hotel kitchens, which are often located on basement floors below the street level. The equipment of the kitchen includes four large motor-driven machines to wash and sterilize the dishes and silver, an electric machine to peel



Photos. Dix Duryea

Main Office Adjoining the Entrance Lobby. The Roosevelt Hotel, New York

potatoes, and another machine equipped to whip eggs, cream, etc. Two brick ovens weighing 85 tons provide the means for baking bread; another machine mixes flour in large quantities; 26 gas ranges, 12 gas-charcoal broilers and six large soup caldrons complete the equipment. Separate refrigerators which are provided for various foods are cooled by machinery with individual, control temperature equipment. All serving and work tables are of metal to prevent rust or any other form of corrosion. The floors of the kitchen and service rooms are of red tile with sanitary coved bases.

Above the mezzanine is the second or service floor, which has been equipped with every convenience for comfort that modern ingenuity and invention have produced. A Turkish bath and plunge occupy the center of this floor, around which are located temporary guest rooms or booths, 50 in number, 25 of which have cots and are fully equipped as dressing rooms. These small rooms, which are a new feature in hotel service, have many uses; guests who arrive when the hotel is full can be temporarily accommodated in these rooms, which will also be found useful when men and women after a day in town wish to change their costumes for an evening at the theater. The cost will be but a fraction of that of the regular rooms. Various executive offices and additional private dining rooms, hair-bobbing parlor, telephone switchboard rooms

and linen room are also located on this floor. The principal feature of the third floor is the hospital, completely equipped with operating room, waiting rooms, and examination rooms, where a physician and trained nurse are always available. On the Vanderbilt Avenue side of this floor provision has been made for a roof garden over the ballroom, where tea and dancing may be enjoyed in an atmosphere of fountains, flowers and bright colored awnings. The remaining floors of the hotel are devoted to guest rooms, arranged so that they may be used singly or in suites. There are four large suites on the upper floors which will be furnished in the most luxurious manner possible. Each of these suites consists of a drawing room, dining room, three large master bedrooms and baths, dressing room, maid's room and separate pantry. On the 14th floor will be a playroom for children, to be known as the "Teddy Bear Cave," which will be furnished with toys and games of every description and in charge of a competent nurse who will care for children during the absence of their parents throughout the day. Adjoining this playroom is a sunny roof, adequately protected, where the children may play in pleasant weather. The 18th floor is devoted to carpenter, upholsterer, locksmith, paint and printing shops, valet headquarters and other indispensable service departments. On the 19th floor have been located kennels



Opposite the Hotel Office Are the Several Elevators

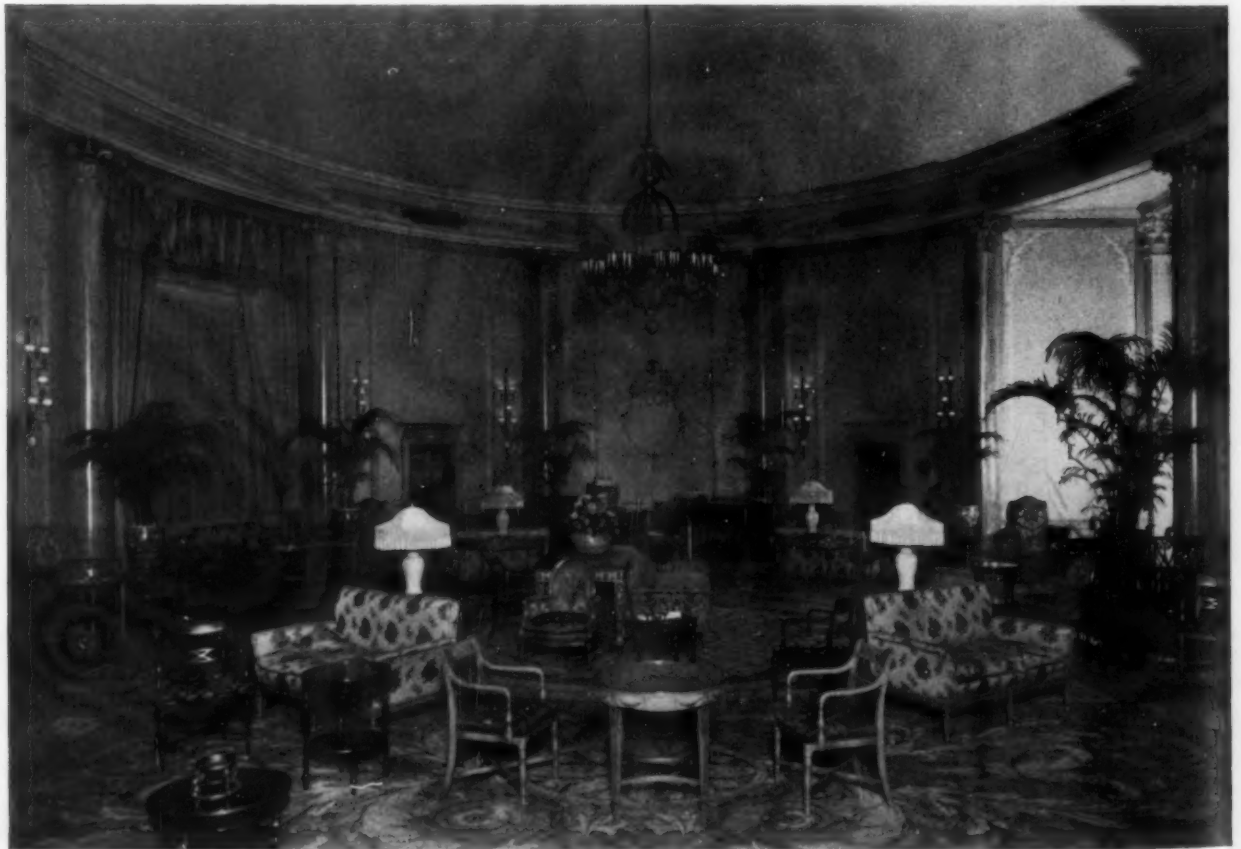


Ballroom, Showing One of Arthur Crisp's Panels

and runs for dogs belonging to the guests, and individual cages where pets of any kind may be cared for by an experienced veterinarian.

Great credit is due to the architects of the Roosevelt Hotel, George B. Post & Sons, who were the engineers as well. They have succeeded in creating a most perfect structure, architecturally and mechanically, for the care and comfort of the traveling public. The engineering problem in itself was not simple. The foundations of The Roosevelt rest on lead pads on solid rock, thereby eliminating any possible subsurface vibration affecting the building, the total weight of which is 1153 million pounds. In some cases the weight carried by one steel column at its base is 4,000,000 pounds. The guest room floors are supported over the clear span of the public rooms below by steel trusses 53 feet long, the maximum load carried by a single truss being more than 3,000,000 pounds. 10,000 tons of structural steel were used in the construction of the building, the total cost of which was over \$12,000,000.

For the interior architecture and decorations of the Roosevelt Hotel, the architects took as their inspiration the finest known examples of American Colonial architecture and decoration. These precedents were followed with unusual care, accuracy and good taste. Considering the great American after whom the hotel is named, no more appropriate style of architectural decoration could have been



Photos. Dix Duryea

The Oval Palm Room Is Designed in the Adam Style, Carried Out in Tones of Green, Blue and Old Rose

chosen, for the Roosevelt ancestry is closely identified with the history of this country from the days of the earliest Dutch settlers.

Among the early American buildings from which inspiration was derived for the design of the interior details of The Roosevelt, are the New York City Hall; "Homewood," the famous Baltimore home of the Carrolls, built in 1809; "Whitehall," a famous Colonial mansion of the 18th century; the "Octagon" built in 1810 in Washington; "Kenmore," an old Virginia mansion, built about 1753; the Gordon house in Savannah, built about 1800, and the well known Gibbs house in Charleston, built in 1753. Space does not permit a detailed account of each individual use of precedents from these various Colonial buildings. Only a general description of the interior architecture and decoration of the various rooms will be attempted. Entering the main lounge by the stairway from the entrance vestibule on 45th Street, an impression of unusual dignity and refinement is obtained from the tall, fluted Corinthian pilasters and coffered ceiling of the main lounge. The walls, pilasters and cornice are of travertine, while the plaster ceiling is painted in old ivory and dull gold. Rugs in soft tones of blue and old gold, as well as the rich brocades and velvets used for the furniture coverings, add warmth and richness to the color effect of this great room. The iron balustrades which are copied from those of an



View of Main Lobby, Looking Toward Palm Room



A Monumental Stairway Leads from the Entrance Vestibule to the Main Lobby



HOMELIKE ATMOSPHERE OF BREAKFAST ROOM IS PROCURED THROUGH USE OF A LANDSCAPE PAPER



Photos. Dix Duryea

GRILL ROOM ON THE GROUND FLOOR HAS A LOW BALCONY ON ALL SIDES
THE ROOSEVELT HOTEL, NEW YORK
GEORGE B. POST & SONS, ARCHITECTS



VIEW OF MAIN DINING ROOM, SHOWING MURAL PANELS BY N. C. WYETH



ONE END OF THE LONG LOUNGE OVERLOOKING MADISON AVENUE
THE ROOSEVELT HOTEL, NEW YORK
GEORGE B. POST & SONS, ARCHITECTS

old house on Irving Place, New York, add notes of interest to the various openings between the grouped pilasters. The main lobby is separated from the Palm Room at the south by pilasters and flights of low steps at either side. Treating the Palm Room as a continuation of the main lobby adds still further to the dignity and spaciousness of this room. The so-called Palm Room, which really serves as a foyer and reception room for the main dining room, is elliptical in shape and decorated in the Adam style with marbleized columns and painted wall decorations in pleasing shades of soft green. The wall decorations themselves suggest Chinese Chippendale influence. The beautiful carpet in soft tones of green, yellow and rose has also been designed in the Adam style. Painted and upholstered chairs and sofas are attractively arranged in groups with tables and lamps to form many centers for conversation and conference. The heavy hangings at the windows are of a rich yellow damask which contrasts delightfully with the gray-green of the walls and columns. Touches of dull gilt in the capitals of the columns, the mirror frames, chandelier and wall brackets, add still further to the effective color scheme of this richly satisfying room.

A few broad steps lead from the Palm Room into the main dining room, at the eastern end of which a low balcony with marble balustrade adds dignity and interest. The architectural details of this room are pure Colonial, the inspiration for which was largely derived from the decorative detail of the New York City Hall. The whole effect is one of monumental dignity and reserve. The paneled walls, the fluted pilasters, richly decorated entablature, and high arched windows hung with heavy draperies, reproduce with remarkable accuracy the atmosphere of a great Colonial banquet hall. On the north wall of this room a painting in three panels by N. C. Wyeth recalls the discovery by Hendrik Hudson in his ship, the "Half Moon," of the river which now bears his name, forming a pleasant note of color and interest on a long wall which otherwise would have been monotonous. The ivory white of the woodwork and ceiling in this

room is relieved by the rich coloring of the window hangings, floor coverings and other furnishings.

A few steps above the main lobby level, along the Madison Avenue side, is the long lounge, a gallery which embodies a homelike atmosphere always welcome in hotel public rooms. The walls are paneled in oak, divided by pilasters after a design found in a paneled room in an old Colonial house in Coventry, Connecticut. In this paneling, which represents the earliest phase of English Renaissance architecture in this country, there is a decided sug-

gestion of the William and Mary period of English decoration; so with perfect consistency this long gallery or lounge has been furnished with replicas of old pieces of the William and Mary and Queen Anne styles. Chimney-pieces at either end of this long room make appropriate centers for the grouping of comfortable chairs and couches.

The two breakfast rooms on the northeast corner of the main floor have also been carried out in an attractive decorative scheme, through the combination of colored landscape wall paper and Colonial woodwork finished in white. The fireplace in this room, which contains an over-mantel decoration by Mr. Wyeth, is an unusually fine example of the



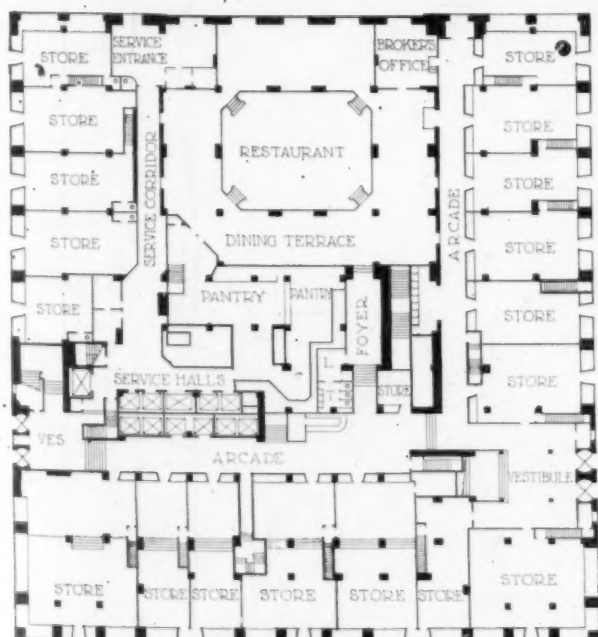
Detail of the Main Lobby

Colonial period, old Dutch tile forming the face of the fireplace opening. One flight above this main floor is the Colonial ballroom with its colorful wall panels by Alfred Crisp, representing the story of Cinderella. The tall windows of this well proportioned room were inspired by those of the Chase house, built in Annapolis in 1770, while the design of the cornice is taken from the old Brewster house built in Charleston in 1760. The ironwork of the elaborate balcony railing, decorated in dull gold and silver, is taken directly from a design by Robert Adam, and the Colonial detail of the ceiling is derived from "Kenmore," an old Virginia mansion. The warm tones of ivory and old gold give a richness to the splendid architectural details.

The consistent use of Colonial details and decorations throughout both the public and private rooms of The Roosevelt produces a consistency of decorative design seldom found in the modern hotels.



THE PARK AVENUE FACADE SHOWS AN INTERESTING ARRANGEMENT OF THE REQUIRED SETBACKS



GROUND FLOOR PLAN



BALLROOM FLOOR PLAN

THE ROOSEVELT HOTEL, NEW YORK
GEORGE B. POST & SONS, ARCHITECTS

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Photos. Dix Duryea

CORNER OF MAIN LOBBY, LOOKING TOWARD OFFICE
THE ROOSEVELT HOTEL, NEW YORK
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LOOKING FROM THE OVAL PALM ROOM INTO THE MAIN DINING ROOM
THE ROOSEVELT HOTEL, NEW YORK
GEORGE B. POST & SONS, ARCHITECTS

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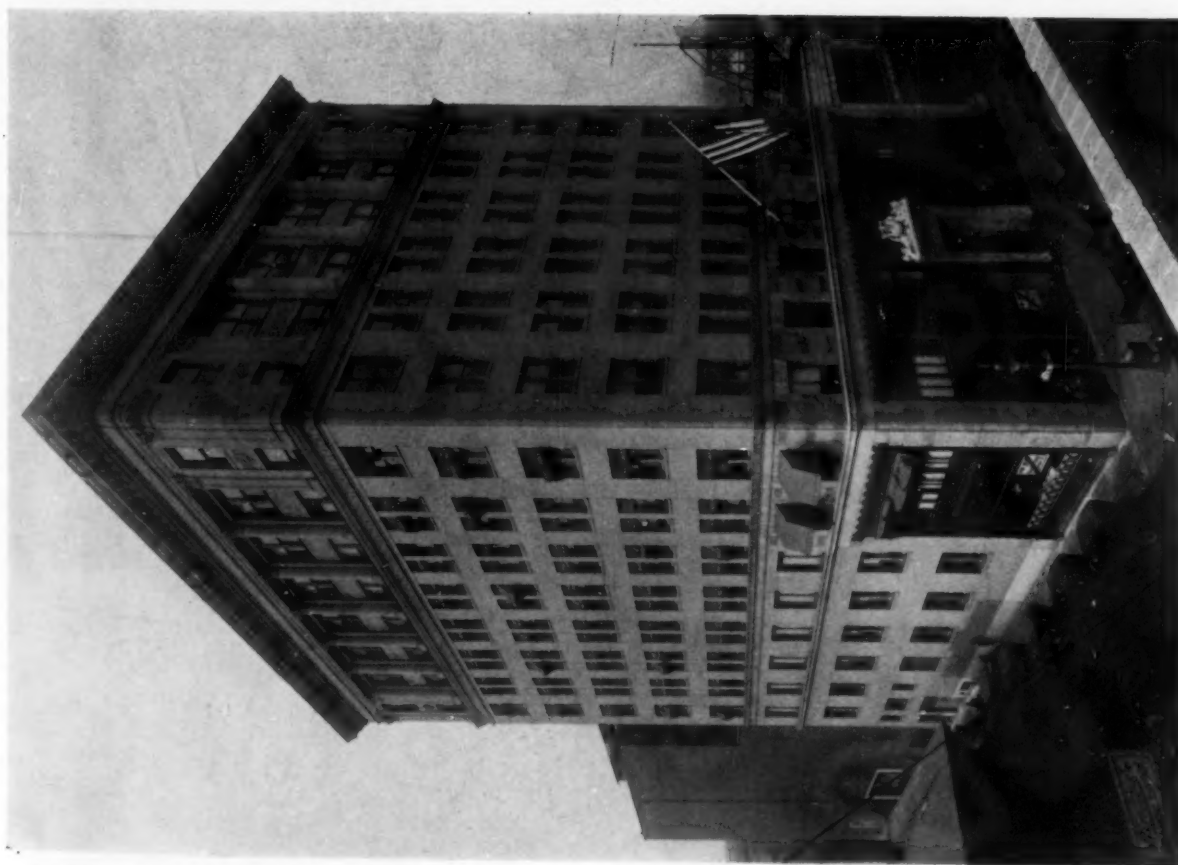


CORNER OF MAIN DINING ROOM SHOWING FINE COLONIAL DETAIL
THE ROOSEVELT HOTEL, NEW YORK
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CHAMBER OF COMMERCE BUILDING, NEWARK
GUILBERT & BETELLE, ARCHITECTS



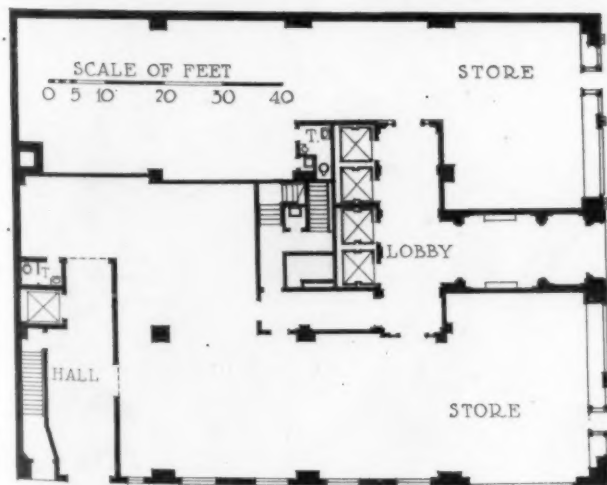
Photos. Ditt Duryea

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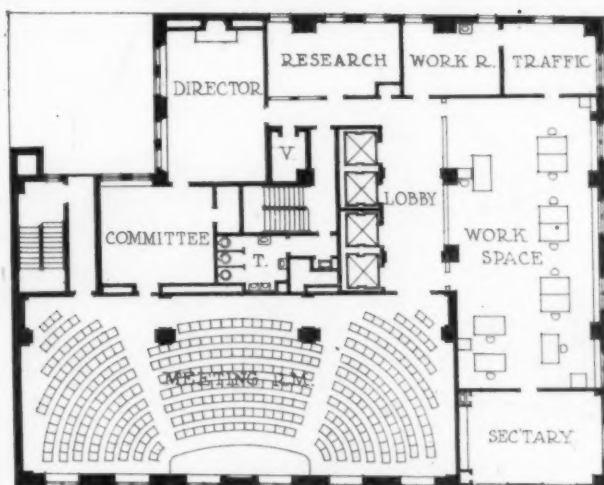
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THE ELEVATOR LOBBY HAS A VAULTED CEILING IN DULL GOLD



ENTRANCE FLOOR PLAN



THIRD FLOOR PLAN

CHAMBER OF COMMERCE BUILDING, NEWARK
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GARDEN FRONT



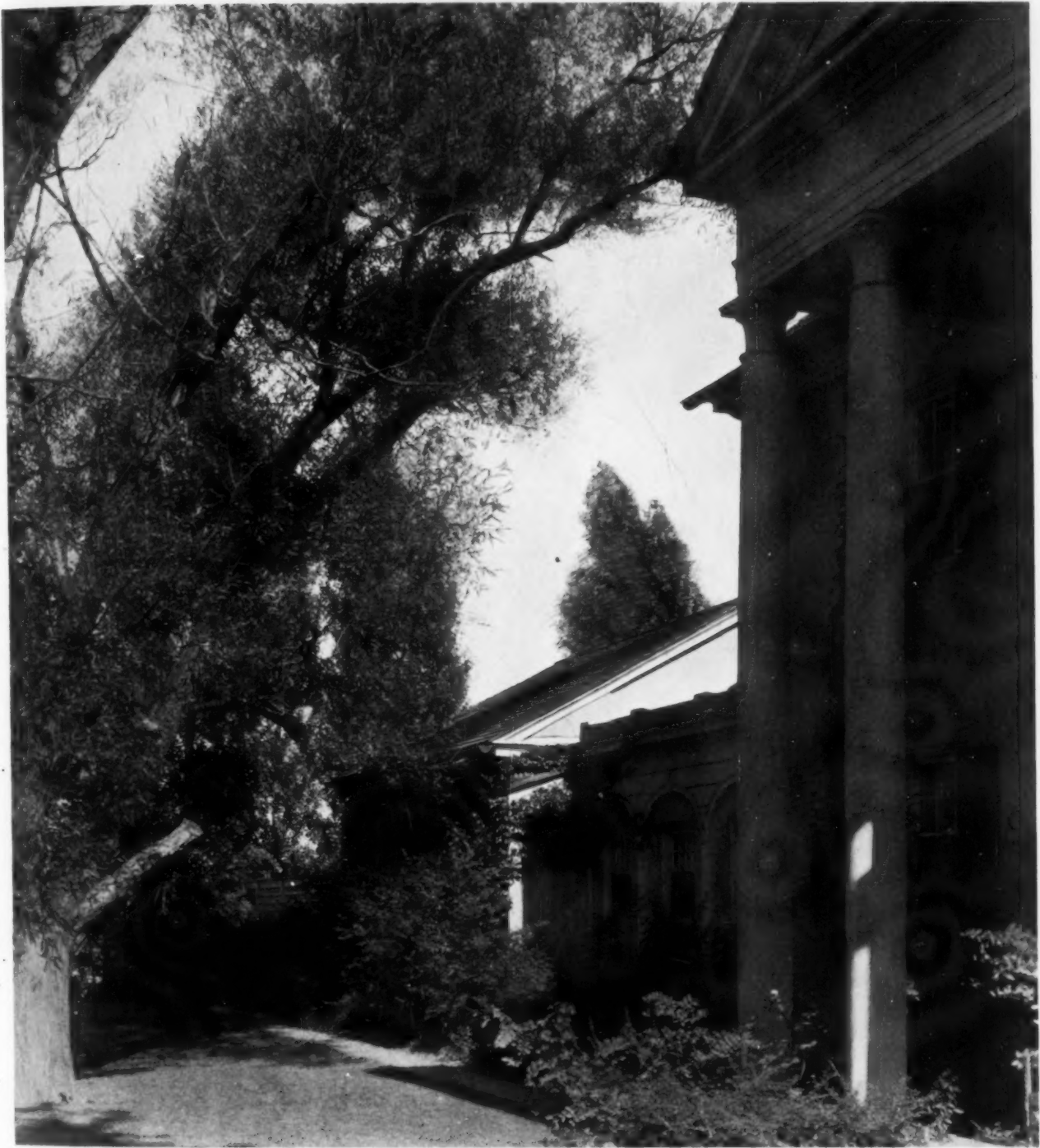
ENTRANCE FRONT

HOUSE OF DR. HAROLD L. SPRINGER, ROCKLAND, DEL.
BROWN & WHITESIDE, ARCHITECTS

Photos. Tebbs & Knell

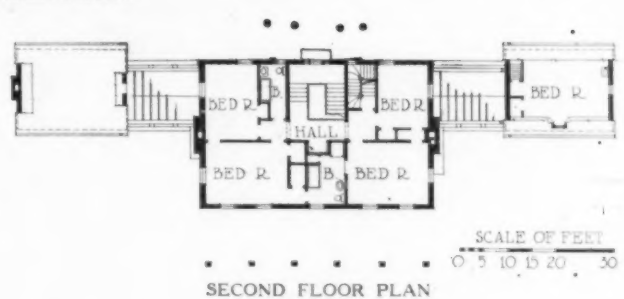
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Photos, Tebbs & Knell

DETAIL OF THE GARDEN FRONT

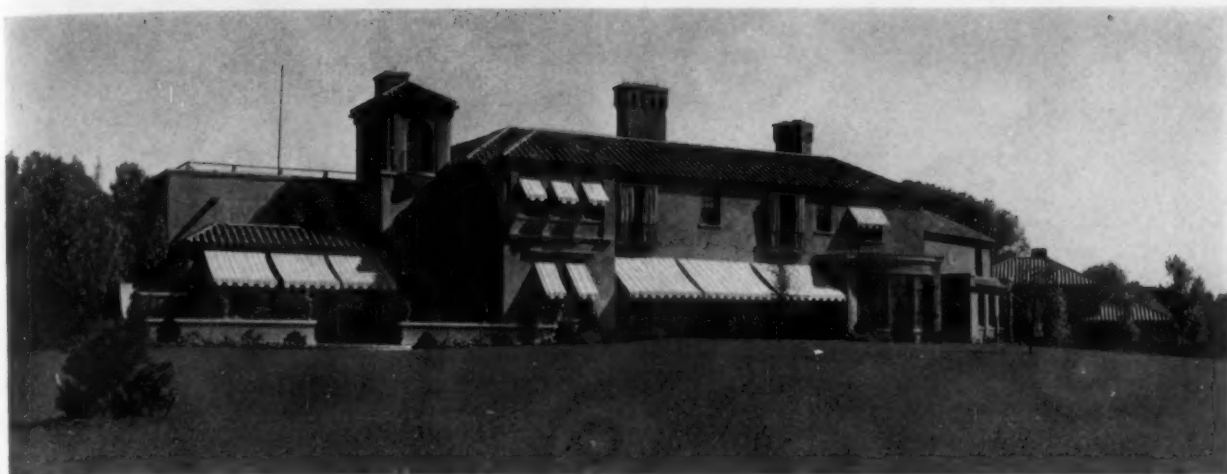


SCALE OF FEET
0 5 10 15 20 30

HOUSE OF DR. HAROLD L. SPRINGER, ROCKLAND, DEL.

BROWN & WHITESIDE, ARCHITECTS

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House of J. G. Kellogg, Esq., Winnetka, Ill.

CHATTEN & HAMMOND, Architects

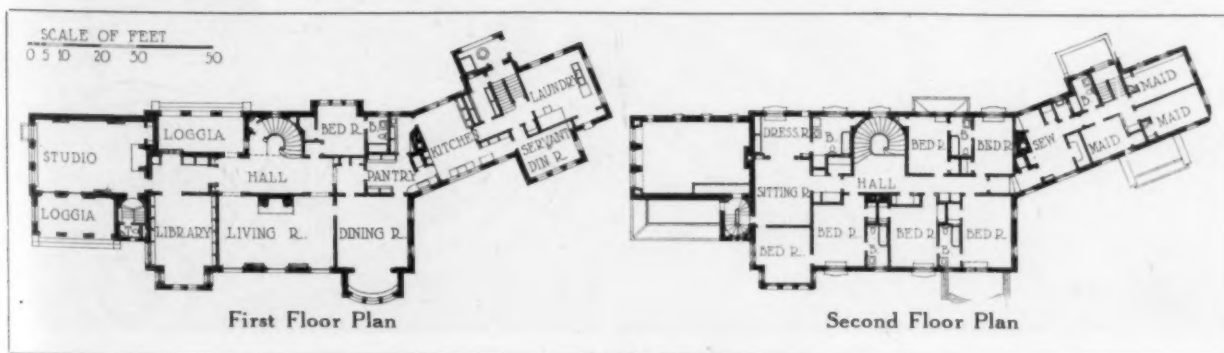
IN wide acreage overlooking the Skokie Valley is located the Italian villa of Mr. J. G. Kellogg. To take advantage of the extensive view from the site selected, the house was carefully located. Besides the main house there is the large building which contains a four-car garage, apartments above for chauffeurs, and stable and wagon storage, shown on page 288. There is also a small gate lodge at the entrance to the estate.

The residence itself is set back from the main road far enough to permit the grouping of all the buildings upon a curved drive in a manner which adds greatly to the interest and effectiveness of the entire composition. All of the buildings are constructed of hollow tile finished on the outside with cement plaster of a rough, uneven texture and of a color to harmonize with the roofs, which are of mottled Spanish tile in soft tones of dark red and brown. The trimmings are in buff Indiana limestone, with a few details executed in polychrome terra cotta. The interior walls of the main portion of the house are of plaster, sponge finished, painted and glazed. Floors throughout the first story, except in the library and service portion, are of tile. In the living room a dark brown tile has been used, and the wood

wainscot is finished in brown with mouldings brought out in dull blue and gold. The tile floor in the hall is gray and black faience, while in the studio tile of blue and black are used. The wainscots of all bathrooms are of colored tile in mat finish. The special feature of the house is the studio, which has been built to provide a place of greater privacy and seclusion for the family. A loggia and broad terrace open off this room, from which an extended view over the Skokie Valley may be enjoyed. The walls of this studio are tinted to contrast with the dark ceiling of redwood. From this room a private stairway leads to the master's suite on the second floor, the stairs occupying a corner tower.

The service wing has been planned to give ample cross ventilation to all the rooms. A large laundry and servants' dining room, having windows on three sides, occupy the end of the service wing. Above the service rooms on the first floor are the servants' bedrooms and bath, which are reached by a small stairway from the passage leading to the laundry.

In design the exterior of the house follows closely Italian prototypes found in the smaller villas around Florence. The rough, stucco-covered walls, tinted in tones of dull yellow, rise two stories to the low





The Living Room



The Studio

pitched roof of brown tile. Iron balustrades and grilles, in addition to the stone decorations of the entrance arcade, further emphasize the Italian spirit of the house. The exterior design, although unsymmetrical, is well balanced. The large studio wing at the north end of the house is balanced by the long service wing at the south. The small arched windows of the studio with their heavy iron grilles give a mediæval touch to the high plaster walls of the studio wing. Approaching the entrance side of the house, a low stair tower is discernible above the flat roof of the studio. This stair tower, with its arched windows and pyramidal tile roof, still further adds

to the Florentine appearance of this villa. The garden front shows less formality of design than the entrance facade. Here the long terraces of the living room and the studio loggia effectively add to the composition, which is well studied as regards picturesque balance. The square stair tower fits pleasantly into the composition in the angle formed by the studio and main house. The vertical lines of the tower are offset by the horizontal lines of the studio and loggia roofs. This composition of tower, low loggia and the projecting two-story bay of the library is balanced by the length of the main house extending to the south and the large breakfast



Entrance Front, House of J. G. Kellogg, Esq., Winnetka, Ill.
Chatten & Hammond, Architects



Entry to Studio



The Studio

porch off the dining room. The composition is still further continued to the south by the service wing of the house and the picturesque garage and stable buildings beyond. Although not close in its adherence to Italian precedent, the design as a whole suggests a pleasant compromise between modern requirements and ancient precedents. A certain freedom in the handling of all details gives a distinctly American feeling to this Italian villa design.

The plans show a well studied arrangement of living rooms and halls. Entering through a large arcaded loggia, a view is obtained out over the west terrace, through the doors of the living room, which

are on axis with the front door. The main hall runs the long way of the house, having a graceful circular stairway opening midway of its length. The principal room in the main house is the living room, 21 by 32 feet. This room opens onto a broad flagged terrace overlooking the lawn and distant valley on the west. To the south of the living room is the square dining room with its curved alcove bay, while to the north is the library with high bookcases and deep bay windows. At the north end of the entrance hall the studio is entered through a passageway which is paneled from the tile floor to low, vaulted ceiling, as may be seen in the illustration on page



Main Hall, House of J. G. Kellogg, Esq., Winnetka, Ill.
Chatten & Hammond, Architects

287. The studio, which is 20 by 30 feet, practically the same dimensions as the living room, by reason of the added height of the ceiling with its exposed beams is given an appearance of greater size than the low ceiled living room. Rough plaster walls with tile base are used throughout the first floor of the house. These walls give severity and dignity to the decorative effect of the interior, which is relieved by the use of antique Italian and Spanish furniture, candelabra, and mirrors. Color in the various rooms is obtained entirely by the use of rich toned tiles for the floors and interesting brocades and linens for the window hangings and furniture coverings. The fireplace in the living room is decorated with a richly carved enframing of mouldings, while the chimneypiece in the studio is carried out in severe interpretation of the Italian style. A balustraded balcony in dark redwood adds interest to the left wall of the studio, connecting with the landing of the circular stairway in the tower, leading from the studio up to the master's suite on the second floor.

The square dining room, which is located at the northwest corner of the house, opens into the living room and connects by a square entry with the main hall. Directly back of this room is the large serving pantry, which has two openings into the kitchen. One of these openings is through a pan closet, which is rather an innovation, connecting with the butler's pantry. The large kitchen has outside ventilation on opposite sides, as it extends the entire width of the wing of the house. Ample storage, refrigeration and pantry spaces have been provided. The plan of the entire service department shows

care and thought in the manner in which it has been worked out for the comfort and convenience of all.

The plan of the second floor of the main house, which in outline exactly duplicates the lower floor, contains six master bedrooms, a large sitting room, dressing room and four bathrooms. Two of the latter are located so as to be accessible from two bedrooms each. The height of the studio ceiling prevents the locating of any rooms above it. The sitting room in the master's suite, situated in the center of the house without windows, is lighted by an elliptical ceiling light which gives this room the quaint effect of a salon on a private yacht. The bedrooms of the second floor, like the living room on the first floor, are all finished in rough plaster and furnished with antique Italian, Spanish and French furniture. A pleasing consistency has thus been achieved in the interior as well as the exterior of the Kellogg house.

This same consistency in design is found in the farmer's house and the large garage and stable building, where stucco walls and low roofs of red and brown tile repeat the materials and treatment of the main house. These two service buildings have been wisely located on the arc of a circle formed by the entrance drive, intruding in no way upon the formality of the entrance courtyard, so that approaching the house the eye is led pleasantly to the long, low Italian villa lines of the house itself, which remains the dominant feature of the group. The low roofs and projecting wings of the garage and stable building are repeated in the farmer's house with which it is connected by high, stucco-covered walls.



Garage and Stable. Estate of J. G. Kellogg, Esq., Winnetka, Ill.

Chatten & Hammond, Architects

"Little Orchard"

HOUSE OF MRS. LAURA LEVERING, GREENWICH, CONN.

PHELPS BARNUM, Architect

DESIGNED in a simple adaptation of the English farmhouse style, this stucco house owes its charm to carefully studied proportion and informal balance of design. The stucco is tinted soft ocher and the trim stained brown. Gay orange awnings edged with blue add color to the design during the summer months. During May, when the house was photographed, the pink and white blossoms of the old apple trees in the midst of which the house is located stood out in pleasing contrast to the warm tones of the stucco walls. The roof of the house is stained in tones of brown, copper and dull green, sufficiently deep in tone to hold down the lighter tone of the walls. Deep yellow chimney pots on the tops of the stucco-covered chimneys give the final touch of color to the entire design, expressing and emphasizing its character.

The lot on which this house is located is not large, but the house has been so well placed that a feeling of complete isolation and privacy is obtained from the garden front of the house, where a paved terrace as well as a small covered porch gives ample opportunity for out of door life during the summer months. On this garden front tall casement windows help to connect more intimately the living

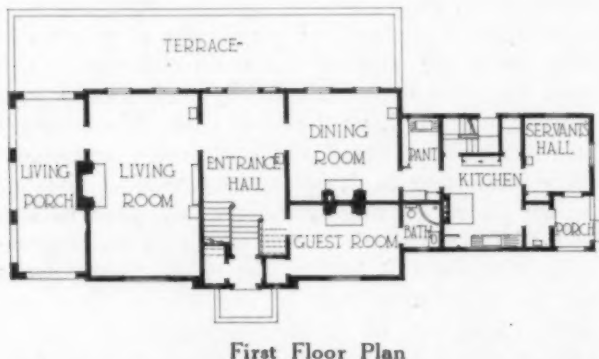
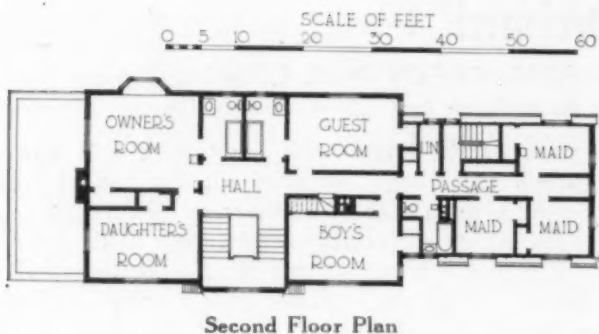
rooms of the house with the terrace and flower garden adjoining. An oriel window roofed with copper gives a note of interest and picturesqueness to the otherwise formal garden facade of the house.

The plan is as simple and direct as is the exterior design. From the entrance door a small vestibule is entered, off of which is a good sized coat closet. From this tile-floored vestibule two steps of travertine lead up to the floor of the main entrance hall. A wrought iron handrail guards the steps on one side, while the start of the main stairway, which rises over the entrance door by means of a long landing, protects it on the other side. The wrought iron handrail and newel of this stairway are exceedingly interesting in design and execution. Heather brown tile of varying tones form the floor of this hall, adding a warmth of tone which contrasts pleasantly with the soft buff of the rough plaster walls and the dull brown stain of the cypress doors and trim. Hangings of Italian damask in red add a further cheerful note to this inviting entrance hall. Opposite the front door in this hall is a wide triple window with casements which gives a delightful vista out across the flagged terrace to the rising hillside back of the house, dotted with picturesque and



Photos. Kenneth Clark

The Entrance Front Shows a Simple Adaptation of English Cottage Architecture



fantastic shaped apple trees, under which the terraced flower garden climbs the hill back of the house.

The living room on the left of the entrance hall occupies the entire western end of the house, permitting windows and tall casements on three exposures. At the north end of this room two casement windows open out onto the stone terrace, while at the west another opens onto the covered porch which is glazed in during the winter months to form a sun porch. The rough plaster walls, trim and doors of this living room are painted a delightful shade of warm gray-green. The large rug, which almost entirely covers the dark stained oak floor, is of a deep mulberry color, while the long window draperies, which are always drawn together at night, are of an unusual shade of soft yellow. This color scheme of mulberry, yellow and green is repeated again in the English chintz which covers many pieces of the furniture in this room. The facing and hearth of the fireplace are of Verd Antique marble in a deep shade, and on the shallow mantel shelf above the fireplace two vases of Chinese red add an interesting note of color against the green of the wall. A more delightful combination of colors than are combined so successfully and



The Garden Front Has a Paved Terrace Upon Which Open the Windows of Living and Dining Rooms

pleasantly in this room could hardly be imagined. Arched doorways containing solid, paneled doors lead from the entrance hall into the dining room as well as the living room, these doors, when opened, permitting an uninterrupted view from the covered porch adjacent to the living room, into the house, across the living room and hall into the dining room, where an old Italian mirror hangs on the inner wall. This axial vista is one of the charming features of the house.

The decorative scheme in the dining room is quite as unusual and delightful as is that of the living room. Illustrations unfortunately convey no idea of the color which makes these rooms so appealing. In the dining room the walls are painted an unusual shade of blue, in which, through a yellow glazing applied on top of the last coat of paint, interesting texture and warmth of tone have been obtained. Blue is generally considered a cold color, but when treated with a warm glaze it takes on a remarkable warmth of tone. Against the blue walls of the dining room an old Coromandel Chinese screen in red lacquer with designs in black, as well as two old cabinets of red lacquer made in England during the Chippendale period when the Chinese style enjoyed



Corner of the Principal Bedroom



Homelike Atmosphere Is Attained in the Living Room by the Grouping of the Furniture

temporary popularity, gives delightful notes of color against the blue walls. Otherwise, the furnishings of this room are old pieces of French walnut of the Louis XIV period. Above the heavy bolection moulding of black and gold marble which surrounds the fireplace opening an interesting architectural decorative painting adds interest to the design. Over the dark stained oak floor the Chinese rug in tones of brown and blue ties together the decorative scheme of this interesting room.

On the right of the entrance hall, back of the dining room, is a small study in the Colonial style with old fashioned buff wallpaper and trim and woodwork painted to match. A large triple casement window floods this room with sunshine during the day, and the open fireplace permits the cheerfulness of burning logs at night. Above the Colonial mantelpiece is a very unusual mirror in gold and cream of the Empire period. Opening off the study is another good sized coat closet and a lavatory. This room is furnished in Colonial mahogany. Window draperies of blue still further emphasize the Colonial color scheme of blue and buff, as does also the blue toned rug which covers the floor. The colored English mezzotints in black glass mats and black frames supply an interesting note of contrast against the buff wallpaper, reproduced from an old house in Portland, Maine.

The principal bedroom, a corner of which is shown on page 291, is decorated in tones of apricot and green. The walls are covered with a soft apricot wallpaper, the color of which is exactly matched in the woodwork and doors. The flounced window draperies are in apple green, as are also the coverings of the window seat and bed. The *chaise longue* and easy chairs are upholstered in an English printed linen which repeats the green and apricot colors of the room. The rug which covers the floor is of a deep taupe. Another bedroom is decorated in yellow and green with touches of blue. Here a Chinese paper of yellow ground with small landscapes in green and blue forms an interesting wall covering. The woodwork and doors in this room are painted the same shade of yellow as the wallpaper. The casement windows which look out into the garden and orchard behind the house are draped with hangings of bluish-green, repeating the blue-green deco-

rations in the wallpaper. To carry out the Chinese spirit of this room the furnishings are in mahogany of the Chinese Chippendale period, and covering the floor is a Chinese rug in tones of blue-green and yellow. On account of the gaiety of the patterned wallpaper all pictures have been wisely omitted from this room. A third bedroom is decorated in gray and blue relieved by touches of old rose found in the color of the rug and the flowers in the old English glazed chintz. This room, which is Colonial in style, is furnished with interesting pieces of Sheraton and Hepplewhite furniture. The walls are hung

with paper in a single tone of warm ash-gray, with woodwork and doors painted to correspond. Against these gray walls the window hangings and bed covers of French blue are very effective, while in the coverings of the upholstered furniture the glazed chintz shows a flower design in old rose and blue against a gray background, repeating the color scheme of the room. The fourth bedroom shows another combination of grays and blues, this time relieved by a rich shade of yellow. The walls are hung with paper of a robin's egg blue, with the woodwork painted to match. The rug is deep gray in color, and the



A Chinese Screen Conceals the Door from Dining Room to Pantry

window hangings and bed covers are of flowered printed linen in which rich tones of yellow predominate. The stair hall on this floor continues the color scheme of buff and dull red used in the main entrance hall below.

In the construction of this house a wood frame covered with wire lathing was used as a ground for the exterior stucco, making it possible to secure an attractive and livable house at a moderate cost. The floors, with the exception of those in the entrance hall and bathrooms, which are of tile, are all of quartered white oak. Cement wainscoting, lined off to imitate tile, is used on the walls of the bathrooms. The high pitch of the roof makes possible the future addition of other master bedrooms and baths on the third floor, if such should be desired, but the roof is much more effective as it is, unbroken by dormer windows. In fact, much of the picturesque and pleasing quality of this house is due to the unbroken surfaces of the roof, against which the gabled roof of the low projecting entrance porch gives a note of scale to the entire exterior design.

A Renaissance Garden at San Domenico, Florence

By ROGER WEARNE RAMSDELL and HAROLD DONALDSON EBERLEIN

THE great Italian gardens of the Renaissance and of the succeeding Baroque age were not always the finished creations of marvelous beauty and compelling charm that we see today. There was a time in the history of nearly every one of them when they were as naked and harsh in their newness as the still uncompleted Victor Emmanuel Monument in Rome. It could not well be otherwise. Gardens, either great or small, do not come suddenly into being endued with all the grace of mellow, subtle maturity, fully grown, like Minerva springing from the head of Jove. This is a truth that many concerned with the making of gardens, especially a certain type of clients, possessed of enthusiasm and abundant means but with little philosophic patience, are too likely to overlook.

The great garden makers of the past had faith and vision; we have the ripe enjoyment of what their faith and vision created, and for this fullness of pleasure we owe a debt of gratitude to the garden makers who planned and labored centuries before we were born. To enter the garden of the Villa d'Este ought to be enough to inspire in us a lively sense of personal obligation to Cardinal Ippolito d'Este and Pierre Ligorio. And familiarity with the garden can only increase our reverence for the Cardinal and Ligorio if we regard a picture of the place painted just after its completion. It is a curious picture, showing with brutal and meticulous frankness every detail of the scheme. There is visible none of the grace or glamor resulting from more than three centuries of growth. The planting, in its naked, scrubby scantiness and puny size, creates the impression of a well ordered vegetable patch in its incipient stages. To have embarked on a work of such magnitude with so little apparent justification or prospect of immediate enjoyment called for the exercise of faith, vision and patience in no mean degree. In the making of any garden—that is, of any garden in which coherent plan plays a part—faith, certitude of vision, and patience are indispensable, but in smaller gardens, of intimate and unpretentious character, a measurable reward of these qualities is realized in a vastly shorter time than is necessary for the mellowing of a great scheme. This was true in the Renaissance, and it is true now, and always will be.

The little *cinquecento* garden at San Domenico, of which the plan and illustrations are given here, is an admirable example of the sort of place in which the Renaissance garden makers found an opportunity for securing effective results in the briefest possible space of time. What they did then is just as readily achievable by us now. As the garden scheme of this unassuming little villa is virtually unchanged from what it was in its pristine condition,

the place is an illuminating, tangible document and replete with suggestions of value for modern use.

The only parts of the establishment with which we are concerned are the loggia along the south front of the house and the approximately square garden with its traditional quadripartite division. On the north the garden is bounded by the aforesaid loggia, the house back of it, and the tool house; on the east and south it is bounded by high stone walls covered with stucco, and on the west it is shut in by the lemon house. The mere fact of there being total enclosure about a space of regular shape assures some degree of coherent plan at the outset; the traditional four-part division with axial paths, boundary paths, and raised beds along the boundaries completes an arrangement simple, obvious and satisfying. The garden is formal to the extent of possessing definite form and symmetrical relation between its parts; it is not formal in the sense of being stilted or pretentious—a connotation which many, unfortunately, attach to the term. As a matter of fact, it is exceedingly intimate and spontaneous in quality. Furthermore, the arrangement,—a very common one indeed,—is indicative of hard common sense on the part of the old garden makers who were fully aware that out of a limited area far more effective and pleasing results could be obtained by well ordered method than by any amount of whimsical or even ingenious affectation of naturalistic savagery—that grotesque fallacy into which “Capability Brown” and his followers were destined to fall several centuries later, to the utter undoing and destruction of some of the finest old gardens in England, Italy and France. It should be noted that flowers are not contemplated in the structural scheme of this garden. They are incidents, and highly agreeable and desirable incidents, but the garden is so devised that it has just as much coherence and poise without them as with them. This is a thing worth remembering today when gardening has not yet wholly escaped from the absolute floricultural thralldom of the last century.

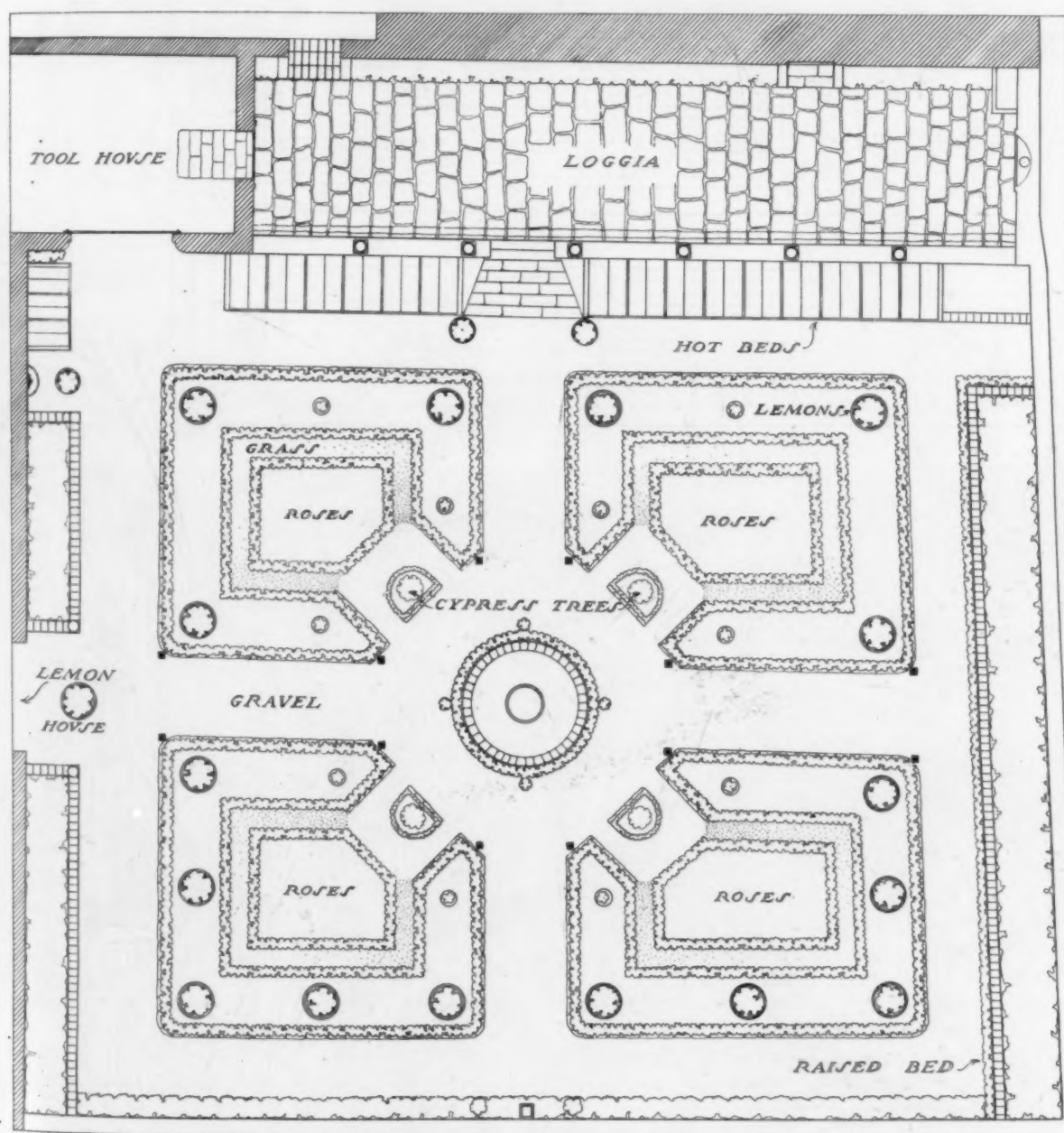
The chief divisions, the central pool and the walks, are edged with low growing box. In the center of the garden, and indicated by square black dots on the plan, are stone piers at each end of the path. Arched iron bars from one to the other form rose trellises, and the rose vines are festooned from these points to the loggia. The loggia is not roofed, but an iron framework (replacing the ancient pole equipment), resting upon the columns and sloping upward to the house wall, gives support to a heavy growth of wistaria that forms a complete shelter. The wrought iron gate leading from the loggia into the tool house, which is shown together with the early eighteenth century or *Barrochino* wooden



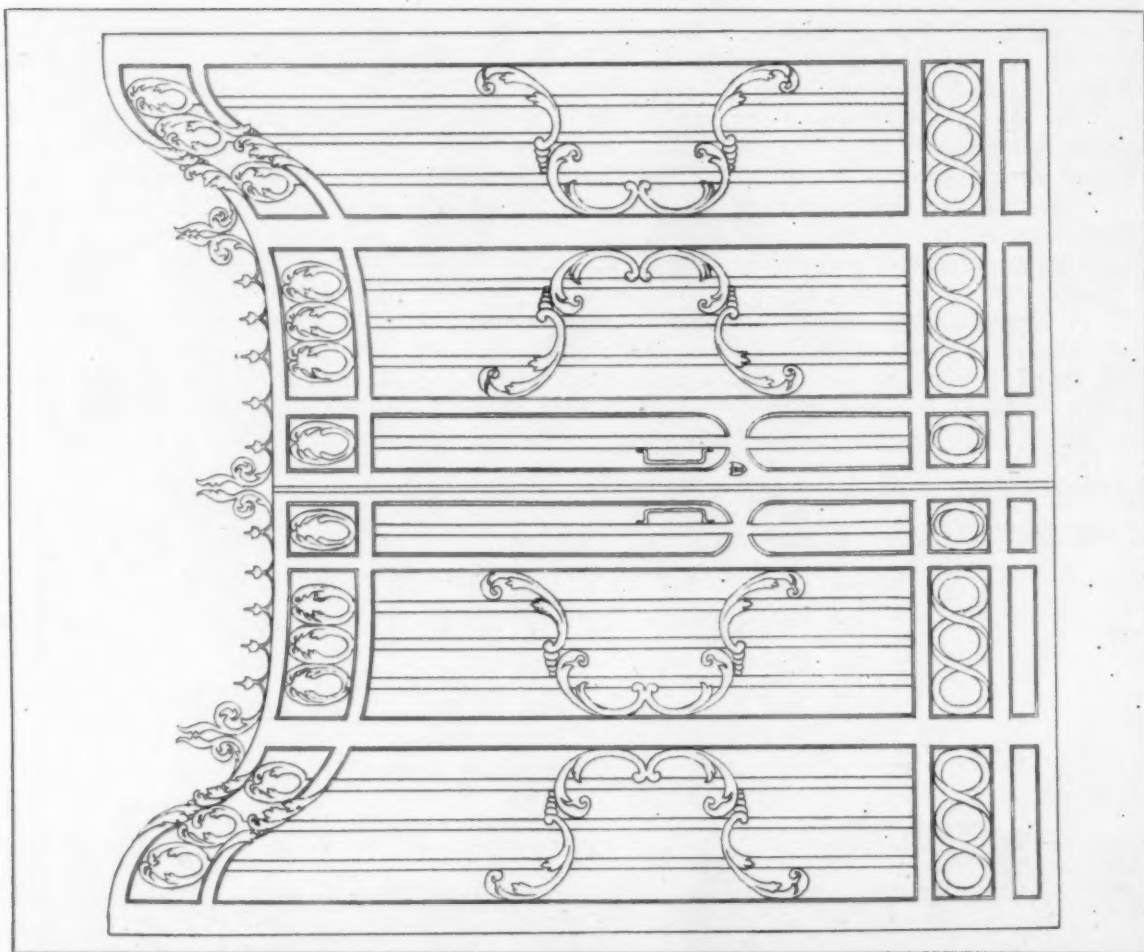
DETAIL OF A CORNER OF THE GARDEN AT SAN DOMENICO, FLORENCE

gates set in the doorway between the tool house and the garden on the detail sheet of measured drawings on page 296, is very free and original in design, suggesting Spanish ironwork of this period. The field of the design shows the use of scrolls bound together and grouped in such a way as to produce a symmetrical pattern, which is further emphasized by vertical and horizontal axes, culminating in large center rosettes and hand-pressed sheet iron. The border again shows symmetry in the use of corner rosettes and scrolls which break the four sides of the axial points. The whole effect of the design is refined and unusually decorative. In the stone entablature of the doorway, in which this gate is placed, there is found a corresponding delicacy of handling in the fine mouldings and small brackets.

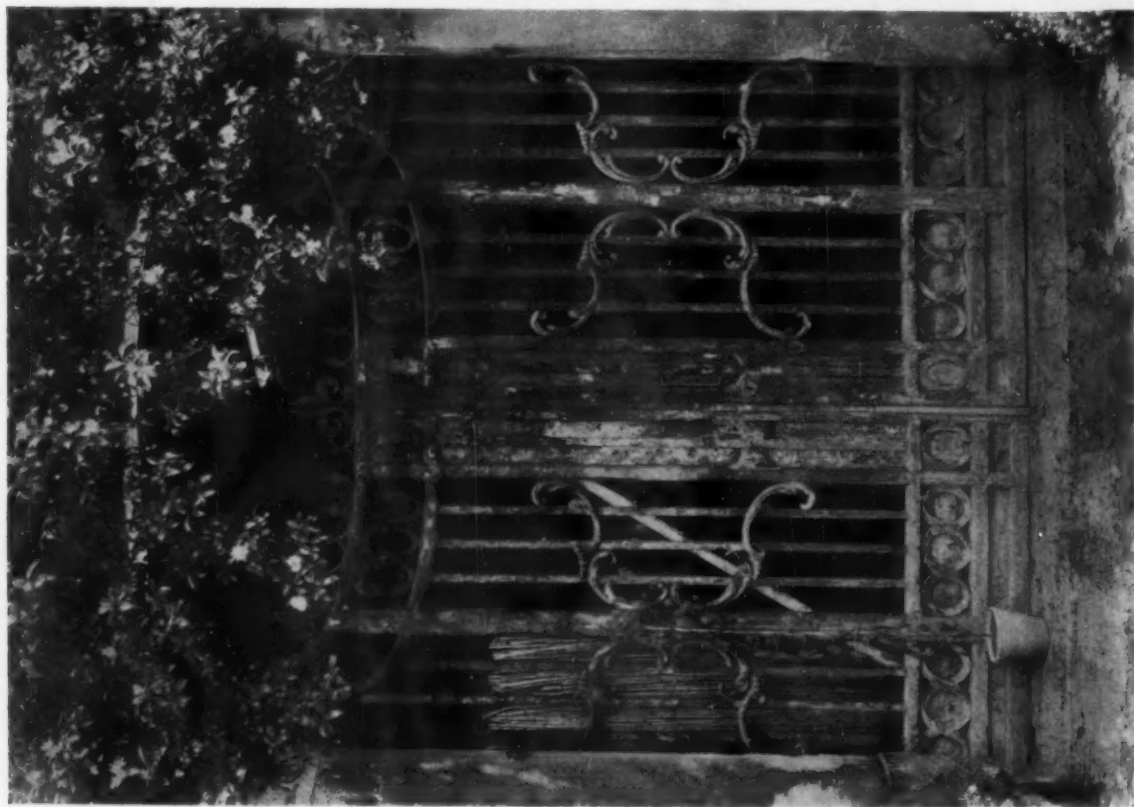
Of equal interest and originality in design are the wooden gates in the doorway of the tool house. The design of this double gate is more formal in character than the wrought iron gate in the loggia; in fact, it differs so greatly in character that it was undoubtedly the work of a different craftsman. The field is occupied by straight balusters of wood, with heavy center stiles dividing each gate into two parts. At the bottom of the design a flowing scroll is carved in the base of the gate, while oval-shaped scrolls terminate each of the balusters, forming a continuous decoration at the top, as well as the bottom of the gates. In the field of plain balusters, graceful scrolls freely handled interrupt and relieve the simplicity of treatment. A delicate cresting with fleur de lis finials decorates the top of the gates.



Plan of Grounds



SCALE DETAIL OF THE WOODEN GATES.



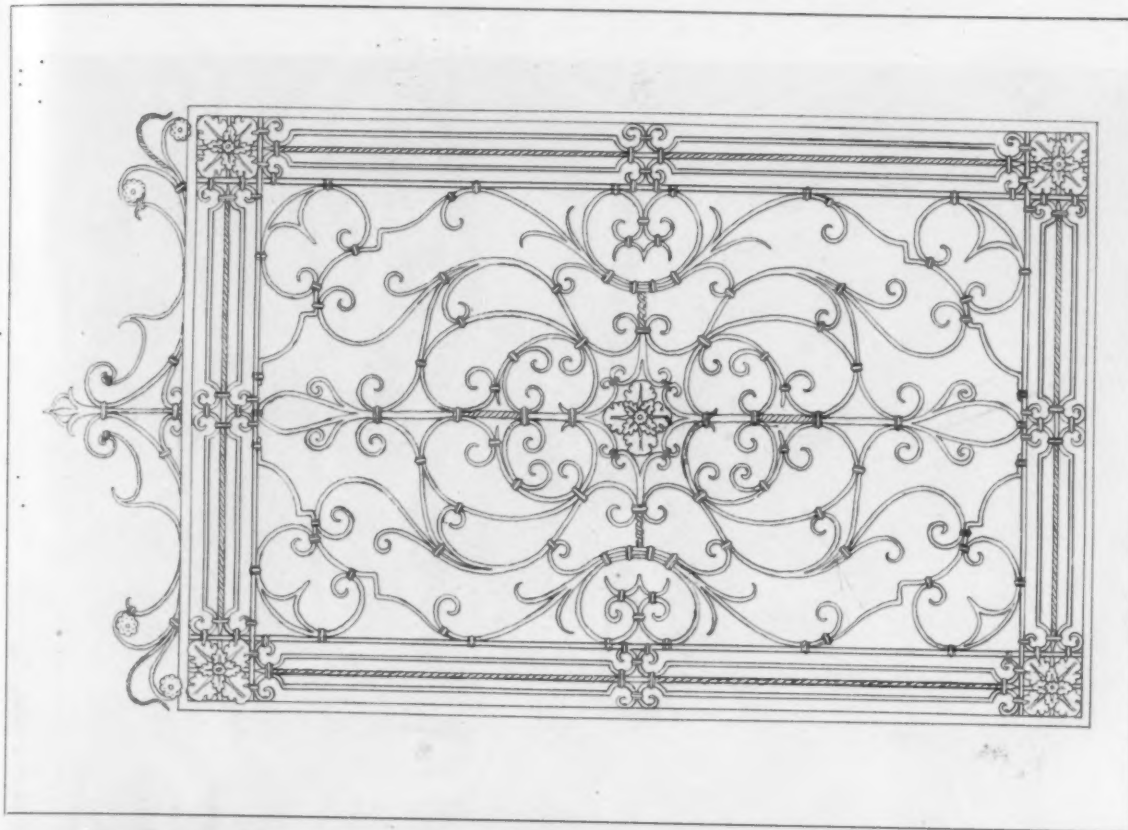
WOODEN GATES TO THE TOOL HOUSE.

OLD RENAISSANCE GARDEN AT SAN DOMENICO, FLORENCE



WROUGHT IRON GATE FROM THE LOGGIA INTO THE TOOL HOUSE

OLD RENAISSANCE GARDEN AT SAN DOMENICO, FLORENCE



SCALE DETAIL OF IRON GATE FROM THE LOGGIA



THE STONE-PAVED, VINE-COVERED LOGGIA AT SAN DOMENICO, FLORENCE



ENTRANCE DOOR TO THE LOGGIA AND GARDEN AT SAN DOMENICO, FLORENCE

Attention should be called to the interesting treatment of the stucco walls of the house itself. The surface has been broken up into geometrical panels by the use of stucco of different colors. This wall treatment, which is found in many of the villas of northern Italy, is an attractive and delightful way of relieving the monotony of broad, unbroken surfaces of stucco. The illustration on page 299 shows the use of these decorative panels. In this same illustration attention should be called to the unusual wrought iron hinges and lock plates, the boldness and the fantastic detail of which is characteristic of the late Baroque style.

The illustration, on page 294, of the corner of the garden formed by the tool house and the main building shows part of the wooden gateway of the tool house, as well as the beautiful wrought iron grille of the semi-circular arched window of the main house. The brick arch of this window is broken by a keyblock delicately carved. This touch of decoration is repeated below the window in the curious mask carved out of one of the foundation stones of the house to form a small fountain. This

same illustration gives an excellent idea of the informal and picturesque quality of this old garden, in which hotbeds and potted trees break the regularity of the design. The cypress trees themselves give added interest in their irregularity of outline.

The charm of this old villa may be still further appreciated by the impression obtained from the illustration on page 298, in which the brilliant sunlight filtering through the dense foliage of the thickly massed vines of the loggia, flecking the rough flagstone floor with spots of light, truly portrays the atmosphere of the old Italy. The feeling of homelike informality and livableness of this compact little garden adds greatly to its charm. In plan it offers many suggestions which could be utilized effectively and successfully in a small modern garden. The uniformity and simplicity of the design, enclosed as it is within a nearly perfect square, is unusually practical. One purpose in publishing the plan and photographs of this delightful little garden at San Domenico is to present a design fundamentally adapted in size and character for use in American country homes being built today in the Italian style.



General View of the Garden at San Domenico, Florence

The Forum Studies of European Precedents

↓ Baroque Doorways in Genoa



Doorway of the Church of San Siro, Piazza San Siro, Genoa

THE abandonment of conformity to constructive principles, which was the decisive cause of the decay of Renaissance architecture in Italy, was due quite as much to the example set by Michaelangelo as to any other one cause. The qualities in his work which appear to have led architecture into the dark and devious ways of the Baroque decadence were first and chiefly its insincerity, in which may be included not only an absence of truthful construction and logical use but also the tendency to employ architectural forms as mere applied decoration. Under the conviction that so great a personality could do nothing wrong, every peculiarity or vulgarity of detail was carefully copied by those who came under the influence of his work. One of these followers and pupils of Michaelangelo was Galeazzo Alessi, who built many splendid palaces in Genoa during the early part of the sixteenth century, the doorways of which were excellent examples of the best period of the Baroque style.

Some of these doorways possess delicate and refined detail, handled with freedom and skill, showing classic orders used in new proportions and arrangements. Several of these doorways show the richly carved entablatures surmounted by broken pediments so characteristic of the Baroque style and the vigorously executed cartouches and scrolls expressive of the decadent spirit of the last days of the Italian Renaissance.

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DOORWAY, NO. 8 RESTIERE DEL MOLO, BANCO DI ROMA, GENOA

The Forum Studies of European Precedents; Plate 10

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DOORWAY, PALAZZO CATALDI, NO. 4 VIA GARIBALDI, GENOA

The Forum Studies of European Precedents; Plate 11

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PIAZZA DOORWAY, PALAZZO DORIA A FASSALO, GENOA

The Forum Studies of European Precedents; Plate 12

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DOORWAY, PALAZZO SERRA, NO. 12 VIA GARIBALDI, GENOA

The Forum Studies of European Precedents; Plate 13

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DOORWAY, PALAZZO PODESTÀ, NO. 7 VIA GARIBALDI, GENOA

The Forum Studies of European Precedents; Plate 14

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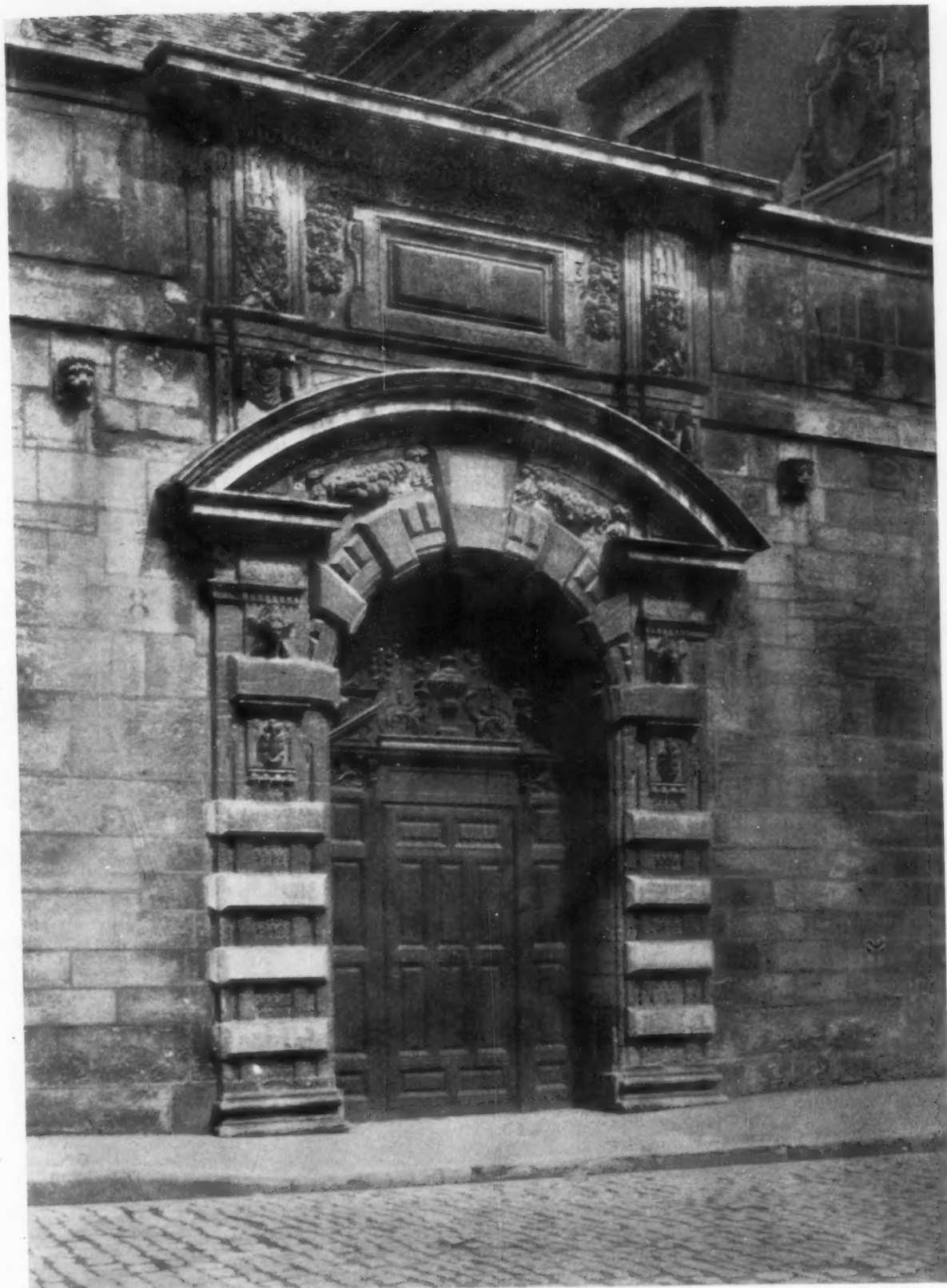


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The Forum Studies of European Precedents; Plate 13

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The Forum Studies of European Precedents; Plate 16

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Charles A. Whittemore, *Associate Editor*

The Design of a Truss with Parallel Chords

By CHARLES L. SHEDD, C.E.

FROM some points of view, the truss is the structure which should be first studied by the student. Its use involves the fundamental principles determining the distribution of stresses in such a way that they appear more simple than in the case of the internal stresses of a beam or girder.

The most important principle of the distribution of stresses is that if we take any structure as a whole or if we cut out any portion of it, then the forces acting on such portion must always fulfill three conditions: First, the algebraic sum of all the vertical forces must equal zero. Second, the algebraic sum of all the horizontal forces must equal zero. Third, the algebraic sum of all of the moments about any point must equal zero. If any of these conditions were not fulfilled, then the structure would not be in equilibrium; if the first were not true, then the structure would be moving in a vertical direction; if the second were not true, it would be moving in a horizontal direction; if the third were not true, it would be rotating. When we speak of horizontal and vertical forces we may not actually mean that, but rather we speak of all of the forces acting in a plane after they have been resolved into horizontal and vertical components. That is, we speak of these components. Furthermore, it may be convenient to consider these components as not acting at right angles to each other but in any two directions not parallel to each other. This principle is often regarded by the student as so simple that it

would be absurd to think of a person's not knowing it, but as a matter of fact it is neglected every day by engineers of long experience who understand its truth perfectly but who do not see its application to the problems before them. No problem in engineering should be attempted without bearing these three conditions constantly in mind.

In a truss we can see the direction which all of the interior forces take, and we can apply these three principles to different parts of it, dividing the truss into as many parts as we find convenient for the application of these principles. Fig. 1 shows a truss with parallel chords with the loads applied to it, also the graphical solution of the stresses in the various members. The truss has its top and bottom chords parallel and is composed of ten panels each 8 feet long. The depth of the truss is also 8 feet. The diagonal web members slope downward toward the center of the truss and are in tension. This is the usual arrangement for a steel truss, as it is more economical to have the longer web members in tension, while in a wooden truss the diagonals are reversed as the truss is more easily constructed to have the verticals in tension. A truss such as is shown in Fig. 1 is known as the "Pratt truss."

The stress diagram is constructed in this manner. The spaces between the loads and between the various members are first lettered. The author uses capitals between the exterior forces and small letters between the various members. The loads are

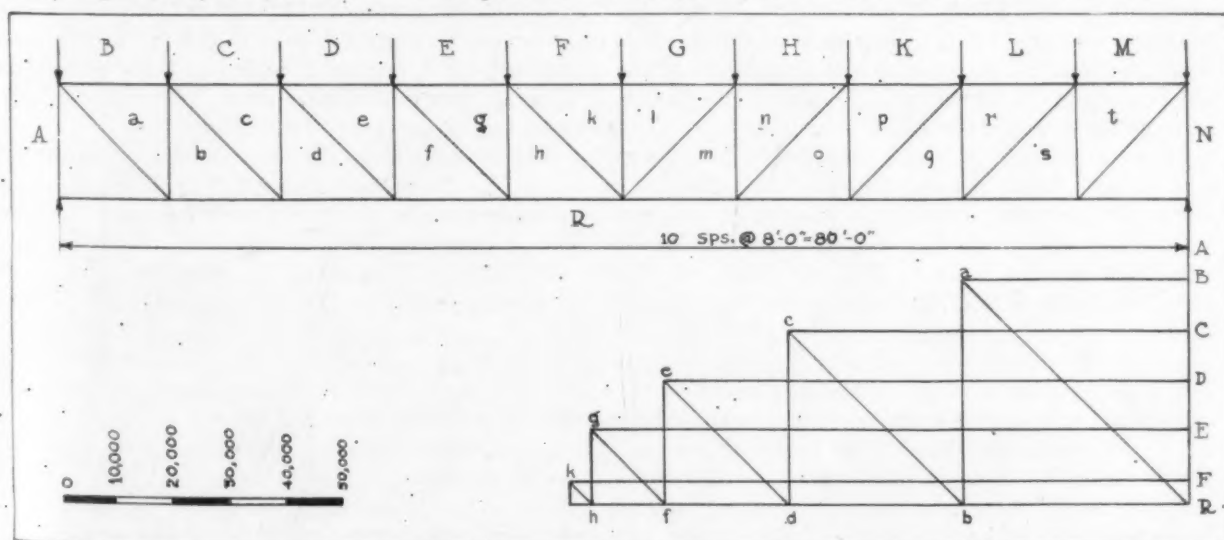


Fig. 1.—Graphical solution of stresses in various members of a truss with parallel chords with loads applied. This 10-panel truss is here taken as carrying a roof with wooden construction where the live load is 40 pounds per square foot and the dead load 30 pounds per square foot. Conditions and details of graphic solution will be found here

| Mem | Stress | T/C | Length | Section | Riv |
|-----|--------|-----|--------|-----------------------------|-----|
| Ba | 40.3 | C | 8 | 2-6"×3½"×⅜" L ^s | 6 |
| | | | | or | |
| Cc | 71.5 | C | 8 | 2-5"×4"×⅜" L ^s | 10 |
| De | 94.0 | C | 8 | | 13 |
| Eg | 107.4 | C | 8 | 2-6"×4"×½" L ^s | 15 |
| Fk | 111.9 | C | 8 | | 15 |
| Rb | 40.3 | T | | 2-5"×3½"×⅜" L ^s | 6 |
| Rd | 71.5 | T | | | 10 |
| Rf | 94.0 | T | | 2-6"×4"×⅜" L ^s | 13 |
| Rh | 107.4 | T | | | 15 |
| RA | 44.8 | C | 8 | 2-4"×3"×⅜" L ^s | 6 |
| Ra | 57.0 | T | | 2-4"×3"×⅜" L ^s | 8 |
| ab | 40.3 | C | 8 | 2-4"×3"×⅜" L ^s | 6 |
| bc | 44.4 | T | | 2-3½"×2½"×⅜" L ^s | 6 |
| cd | 31.4 | C | 8 | 2-3½"×2½"×⅜" L ^s | 5 |
| de | 31.6 | T | | 2-2½"×2"×⅜" L ^s | 5 |
| ef | 22.4 | C | 8 | 2-3"×2"×⅜" L ^s | 3 |
| fg | 18.9 | T | | 2-2½"×2"×⅜" L ^s | 3 |
| gh | 13.4 | C | 8 | 2-3"×2"×⅜" L ^s | 2 |
| hk | 6.4 | T | | 2-2½"×2"×⅜" L ^s | 2 |
| kl | 9.0 | C | 8 | 2-3"×2"×⅜" L ^s | 2 |

¾" φ rivets @ .7500 lb.

½" gussets.

Fig. 2.—Arrangement of results of scaling stresses from the stress diagram and the design of the members themselves with the number of rivets required to take care of each stress

determined and also the reactions. If the loading were not symmetrical the reactions could be found in the same way as for a beam. (See THE FORUM for July, 1921.) The loads are laid out on a vertical line to some convenient scale, as shown in the stress diagram. Start with one force, such as the left-hand reaction, and take all of the exterior forces in order, passing around the truss in the direction taken by the hands of the clock. In this case only half of the forces are laid off, as the truss is symmetrical both in loading and in interior construction. The distance between the points R and A represents the amount of the reaction, the distance between A and B the load at the end of the truss, the distance between B and C the load at the next joint and so on. In the end panels there is no stress in the lower chord, and therefore there is no letter in the space directly above it, as this space is part of the R space. If all of the exterior forces were laid out, we would finally get back to the point R where we started, illustrating the principle that the algebraic sum of all the vertical forces must equal zero, as already described in this article.

If we apply this principle together with the second to each joint in turn, we may find all of the forces in the truss members. First take the end joint at the top of the truss. The forces acting on this joint are the reaction RA, the load AB, the stress in the top chord Ba, and the stress in the end diagonal aR. These must be in equilibrium. To show this graphically in our stress diagram we construct the line Ba parallel to the top chord of the truss and the diagonal from R parallel to the diagonal in the truss, and letter their point of intersection a. We can measure the distances on this stress diagram to the same scale we used in laying out the loads and find out how large these stresses are. In the same way we construct the rest of the stress diagram. To determine whether any stress is ten-

sion or compression, we may take a joint such as the second from the end in the lower chord and place the letters surrounding it in order reading around the joint in the direction of the movement of the hands of the clock, thus RbcdR. We can then read these same letters in the same order on the stress diagram, and the order we read them in shows the direction of the force toward or away from the joint. Toward the joint indicates compression, and away from the joint indicates tension. Thus bc on the stress diagram is upward toward the left or away from the joint we are considering; therefore the member is in tension.

The method usually taught for laying out the stress diagram is to lay out the lines for all of the members, and if it closes in the end that is assumed as proof that the work has been correct. This is the best way for an unsymmetrical truss or for one with unsymmetrical loading, but for a truss with symmetrical loads like that used here and which is the usual kind encountered, it is not always safe, for the writer has known the same error to be made on each side of the truss, when it will still close and the error remain undiscovered. It is therefore recommended that the diagram be checked analytically, as will be described later, for the sake of safety.

The truss used here is taken as carrying a roof with wooden construction where the live load is 40 pounds per square foot and the dead load 30 pounds per square foot, making the total 70. It is taken as being an intermediate truss with another truss on either side of it, the trusses spaced 16 feet apart. The load at each of the intermediate panel points will therefore be 8,960 as indicated in Fig. 3. The reaction will be five times this load or 44,800 pounds. If we figure the maximum moment on the truss and divide by the effective depth of 8 feet we shall obtain the stress in the top chord at the center. This operation is shown in Fig. 3, where the stress is found to be 112,500. By scaling the stress diagram we get 111,900 for this stress. The difference between the two is 600 or a little over one-half of 1 per cent, which is near enough to make no practical difference in the design of the truss, and is therefore satisfactory.

In Fig. 2 we show the arrangement of the results of scaling the stresses from the stress diagram and the design of the members themselves with the number of rivets required to take care of each stress.

We must now examine the table, from which we choose the section for the various members. In most trusses, that is in all those where the stresses are not too large, we use for the section of each member two angles with the gusset plates connecting the various members between them. In the table we have arranged the various sections from which we are to choose our design after the principle first shown in the July, 1921, FORUM for beams. That is, we have arranged the possible sections in the order of their gross weight or area, which is in the order of their cost. Therefore, if we start at the top of

[illegible]

24 rivets
short legs out

DOUBLE ANGLE TRUSS MEMBERS

28-b-b
16000-703

C.L. SHEDD

| Tension | | | Compression | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|-----|-----|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|--|--|
| 28. -- | 1h | 2h | 3h | L-6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | | | | | | |
| 8 x 3 1/2 x 7/16 | 140 | 122 | | 116 | 109 | 103 | 96 | 90 | 84 | 77 | 86 | 81 | 75 | | | | | | | | | | | | | | | | | |
| 5 x 3 1/2 x 5/8 | 146 | 132 | | 125 | 119 | 114 | 108 | 103 | 97 | 92 | 86 | 81 | 75 | | | | | | | | | | | | | | | | | |
| 7 x 3 1/2 x 1/2 | 140 | | | 118 | 111 | 104 | 96 | 89 | 82 | | | | | | | | | | | | | | | | | | | | | |
| 4 x 4 x 1/2 | 138 | | | 119 | 112 | 105 | 98 | 91 | 84 | 77 | | | | | | | | | | | | | | | | | | | | |
| 4 x 3 x 11/16 | 140 | 122 | | 121 | 115 | 108 | 102 | 95 | 89 | 82 | | | | | | | | | | | | | | | | | | | | |
| 5 x 3 x 11/16 | 144 | 128 | | 125 | 119 | 113 | 107 | 102 | 96 | 90 | 84 | 78 | | | | | | | | | | | | | | | | | | |
| 6 x 3 1/2 x 5/8 | 150 | 136 | | 135 | 130 | 126 | 121 | 117 | 112 | 107 | 103 | 98 | 93 | 89 | 84 | 80 | | | | | | | | | | | | | | |
| 6 x 6 x 7/16 | 147 | | | 119 | 112 | 105 | 98 | 91 | 84 | 77 | | | | | | | | | | | | | | | | | | | | |
| 4 x 3 1/2 x 3/4 | 141 | | | 124 | 117 | 111 | 105 | 98 | 92 | 86 | 79 | | | | | | | | | | | | | | | | | | | |
| 4 1/2 x 3 x 3/4 | 141 | | | 133 | 127 | 121 | 116 | 110 | 105 | 99 | 93 | 88 | 82 | | | | | | | | | | | | | | | | | |
| 5 x 4 x 5/8 | 149 | 131 | | 138 | 132 | 127 | 122 | 116 | 111 | 105 | 100 | 95 | 89 | 84 | | | | | | | | | | | | | | | | |
| 6 x 4 x 5/8 | 154 | 138 | | 135 | 129 | 123 | 117 | 111 | 105 | 100 | 94 | 88 | 82 | | | | | | | | | | | | | | | | | |
| 5 x 5 x 5/8 | 154 | 138 | | 136 | 130 | 124 | 118 | 113 | 107 | 101 | 95 | 89 | 83 | | | | | | | | | | | | | | | | | |
| 5 x 3 1/2 x 1/2 | 152 | 134 | | 127 | 119 | 112 | 104 | 96 | 89 | | | | | | | | | | | | | | | | | | | | | |
| 4 x 3 1/2 x 1/2 | 151 | | | 133 | 126 | 119 | 112 | 106 | 99 | 92 | 86 | | | | | | | | | | | | | | | | | | | |
| 4 1/2 x 3 x 1/2 | 151 | | | 128 | 120 | 112 | 104 | 97 | 89 | | | | | | | | | | | | | | | | | | | | | |
| 4 x 4 x 3/4 | 152 | | | 132 | 124 | 117 | 110 | 103 | 96 | 89 | 82 | | | | | | | | | | | | | | | | | | | |
| 5 x 3 x 3/4 | 152 | 132 | | 133 | 125 | 118 | 111 | 104 | 97 | 90 | | | | | | | | | | | | | | | | | | | | |
| 6 x 3 1/2 x 5/8 | 160 | 142 | | 138 | 132 | 125 | 119 | 112 | 106 | 99 | 93 | 86 | | | | | | | | | | | | | | | | | | |
| 7 x 3 1/2 x 1/2 | 163 | 147 | | 137 | 130 | 123 | 116 | 109 | 102 | 95 | 88 | | | | | | | | | | | | | | | | | | | |
| 5 x 4 x 1/2 | 164 | 145 | | 146 | 139 | 133 | 127 | 121 | 114 | 108 | 102 | 96 | 89 | | | | | | | | | | | | | | | | | |
| 6 x 6 x 1/2 | 170 | 156 | | 153 | 148 | 142 | 137 | 132 | 127 | 122 | 117 | 111 | 106 | 101 | 96 | 91 | | | | | | | | | | | | | | |
| 5 x 3 1/2 x 3/4 | 164 | 144 | | 148 | 141 | 135 | 128 | 122 | 116 | 109 | 103 | 97 | 90 | | | | | | | | | | | | | | | | | |
| 4 x 4 x 1 1/8 | 164 | | | 137 | 128 | 120 | 112 | 104 | 95 | | | | | | | | | | | | | | | | | | | | | |
| 4 x 3 x 1 1/8 | 164 | 142 | | 142 | 134 | 127 | 119 | 112 | 105 | 97 | 90 | | | | | | | | | | | | | | | | | | | |
| 6 x 4 x 5/8 | 170 | 152 | | 152 | 146 | 140 | 134 | 129 | 123 | 117 | 111 | 105 | 99 | 93 | | | | | | | | | | | | | | | | |
| 5 x 5 x 5/8 | 170 | 152 | | 149 | 142 | 136 | 130 | 123 | 117 | 110 | 104 | 98 | 91 | | | | | | | | | | | | | | | | | |
| 8 x 6 x 7/8 | 164 | | 153 | 167 | 162 | 156 | 150 | 145 | 140 | 135 | 130 | 125 | 120 | 115 | 110 | 105 | 100 | 95 | 90 | | | | | | | | | | | |
| 6 x 3 1/2 x 1 1/8 | 174 | 132 | | 152 | 145 | 138 | 131 | 124 | 117 | 110 | 103 | 96 | | | | | | | | | | | | | | | | | | |
| 8 x 3 1/2 x 5/8 | 165 | | | 149 | 141 | 133 | 125 | 117 | 109 | 101 | 93 | | | | | | | | | | | | | | | | | | | |
| 7 x 3 1/2 x 5/8 | 162 | | | 152 | 144 | 137 | 129 | 122 | 114 | 107 | 99 | | | | | | | | | | | | | | | | | | | |
| 5 x 4 x 3/4 | 177 | 156 | | 157 | 150 | 143 | 136 | 130 | 123 | 116 | 109 | 102 | 96 | | | | | | | | | | | | | | | | | |
| 5 x 3 1/2 x 1 1/8 | 178 | 154 | | 159 | 152 | 145 | 138 | 131 | 125 | 118 | 111 | 104 | 97 | | | | | | | | | | | | | | | | | |
| 6 x 4 x 1 1/8 | 186 | 166 | | 167 | 160 | 154 | 147 | 141 | 135 | 128 | 122 | 115 | 109 | 103 | | | | | | | | | | | | | | | | |
| 5 x 5 x 1 1/8 | 186 | 166 | | 162 | 155 | 148 | 141 | 134 | 127 | 120 | 113 | 106 | 99 | | | | | | | | | | | | | | | | | |
| 6 x 6 x 5/8 | 190 | 174 | | 171 | 165 | 159 | 153 | 147 | 142 | 136 | 130 | 124 | 118 | 112 | 106 | 101 | | | | | | | | | | | | | | |
| 6 x 3 1/2 x 3/4 | 188 | 168 | | 165 | 157 | 150 | 142 | 135 | 127 | 119 | 112 | 104 | | | | | | | | | | | | | | | | | | |
| 5 x 4 x 1 1/8 | 190 | 167 | | 169 | 161 | 154 | 147 | 139 | 132 | 125 | 117 | 110 | 103 | | | | | | | | | | | | | | | | | |
| 5 x 3 1/2 x 5/8 | 188 | 164 | | 170 | 162 | 155 | 148 | 140 | 133 | 126 | 118 | 111 | 104 | | | | | | | | | | | | | | | | | |
| 8 x 6 x 1/2 | 180 | | 174 | 188 | 183 | 178 | 174 | 169 | 164 | 158 | 151 | 146 | 141 | 137 | 132 | 127 | 123 | 118 | 113 | 109 | 104 | | | | | | | | | |
| 7 x 3 1/2 x 1 1/8 | 197 | 177 | | 166 | 158 | 150 | 142 | 134 | 126 | 118 | 109 | | | | | | | | | | | | | | | | | | | |
| 8 x 3 1/2 x 5/8 | 182 | | | 165 | 156 | 148 | 139 | 130 | 122 | 113 | 104 | | | | | | | | | | | | | | | | | | | |
| 6 x 4 x 3/4 | 200 | 180 | | 181 | 174 | 167 | 160 | 153 | 147 | 140 | 133 | 126 | 119 | 112 | 105 | | | | | | | | | | | | | | | |
| 5 x 5 x 3/4 | 200 | 180 | | 176 | 168 | 160 | 152 | 145 | 137 | 129 | 122 | 114 | 106 | | | | | | | | | | | | | | | | | |
| 6 x 3 1/2 x 1 1/8 | 202 | 180 | | 177 | 169 | 161 | 153 | 145 | 137 | 129 | 121 | 113 | | | | | | | | | | | | | | | | | | |
| 6 x 6 x 5/8 | 210 | 192 | | 189 | 182 | 176 | 169 | 163 | 156 | 150 | 143 | 137 | 130 | 124 | 117 | 111 | | | | | | | | | | | | | | |
| 5 x 4 x 1 1/8 | 203 | 178 | | 181 | 173 | 165 | 157 | 149 | 141 | 134 | 126 | 118 | 110 | | | | | | | | | | | | | | | | | |
| 7 x 3 1/2 x 3/4 | 213 | 192 | | 181 | 172 | 163 | 154 | 145 | 137 | 128 | 119 | 110 | | | | | | | | | | | | | | | | | | |
| 8 x 3 1/2 x 1 1/8 | 196 | | 177 | 179 | 169 | 160 | 151 | 142 | 132 | 123 | 114 | | | | | | | | | | | | | | | | | | | |
| 6 x 4 x 1 1/8 | 216 | 194 | | 195 | 187 | 180 | 172 | 165 | 158 | 150 | 143 | 135 | 128 | 121 | 113 | | | | | | | | | | | | | | | |
| 5 x 5 x 1 1/8 | 186 | 166 | | 167 | 160 | 154 | 147 | 141 | 135 | 128 | 122 | 115 | 109 | 103 | | | | | | | | | | | | | | | | |
| 6 x 3 1/2 x 7/8 | 216 | 192 | | 190 | 181 | 173 | 164 | 155 | 147 | 138 | 130 | | | | | | | | | | | | | | | | | | | |
| 8 x 6 x 5/8 | 210 | | 196 | 211 | 205 | 200 | 195 | 190 | 185 | 179 | 174 | 169 | 164 | 159 | 154 | 148 | 143 | 138 | 133 | 128 | 122 | 117 | | | | | | | | |
| 8 x 6 x 1/2 | 220 | | 206 | 218 | 212 | 207 | 202 | 197 | 192 | 187 | 182 | 177 | 171 | 166 | 161 | 156 | 151 | 146 | 141 | 136 | 130 | 125 | 120 | | | | | | | |
| 6 x 6 x 1 1/8 | 230 | 210 | | 206 | 199 | 192 | 185 | 178 | 170 | 163 | 156 | 149 | 142 | 135 | 127 | 120 | | | | | | | | | | | | | | |
| 7 x 3 1/2 x 7/8 | 229 | 206 | | 196 | 186 | 177 | 167 | 158 | 149 | 139 | 130 | 120 | | | | | | | | | | | | | | | | | | |
| 6 x 4 x 1 1/8 | 230 | 206 | | 208 | 200 | 192 | 184 | 176 | 168 | 161 | 153 | 145 | 137 | 129 | 121 | | | | | | | | | | | | | | | |
| 5 x 5 x 7/8 | 230 | 206 | | 201 | 192 | 183 | 174 | 165 | 156 | 147 | 138 | 129 | | | | | | | | | | | | | | | | | | |
| 6 x 3 1/2 x 1 1/8 | 230 | 204 | | 203 | 193 | 184 | 175 | 166 | 157 | 148 | 139 | 130 | | | | | | | | | | | | | | | | | | |
| 8 x 3 1/2 x 3/4 | 216 | | | 197 | 187 | 177 | 166 | 156 | 146 | 136 | 126 | | | | | | | | | | | | | | | | | | | |
| 8 x 6 x 5/8 | 232 | | 214 | 233 | 227 | 221 | 215 | 210 | 204 | 198 | 193 | 187 | 181 | 175 | 170 | 164 | 158 | 152 | 147 | 141 | 135 | 130 | | | | | | | | |
| 7 x 3 1/2 x 7/8 | 245 | 220 | | 210 | 200 | 190 | 180 | 170 | 160 | 150 | 140 | 130 | | | | | | | | | | | | | | | | | | |
| 6 x 6 x 1 1/8 | 248 | 228 | | 224 | 216 | 208 | 200 | 193 | 185 | 177 | 169 | 162 | 154 | 146 | 138 | | | | | | | | | | | | | | | |

readily confused than T and C. The next column shows the length in feet for the compression members. Opposite the tension members the number of holes deducted could be placed. The next column shows the section chosen from the table, while the last column shows the number of rivets used. In this case we have used $\frac{1}{2}$ " gussets which give a value for each $\frac{3}{4}$ " rivet of 7,500 pounds.

The general method used in choosing the sections has already been described. In the case of the top chord we give an alternative in the table. The 5" x 4" angles are the most economical, but they are not as commonly found in shops as the 6" x 3½" angles. In the case of Ra the 4" x 3" angle is used in preference to the others of same area because the 4" x 3" angles are also used for several compression members where they are more economical. It is better for the shop to use as few different sizes as possible.

In Fig. 3 we show the method of arranging the computations if the same truss were computed with a slide rule instead of having its stresses determined graphically.

The reaction, as already noted, was 44,800. The load at the end AB is one-half of the usual panel load, that is 4,480. If it is subtracted from the reaction it gives the shear in the end panel, and again deducting the next load we get the shear in the next panel and so on. By taking a section through each panel we cut three members, the stresses in which are unknown. We can apply the third principle given at the first of this article,—that the algebraic sum of the moments about any point must equal zero. If we choose as a point the intersection of the diagonal with one of the chords, we make the moments of these two unknowns equal to zero, therefore the moment of the other chord about this point must be equal to the moment of all of the other forces to one side of the section about this same point. In this way we can find the chord stresses. The simple way of finding the moments at the various panel points is shown in Fig. 3. The moment at any panel point is equal to the moment at the next panel point toward the nearest end plus the shear in the panel multiplied by the length of the panel. These moments divided by the effective depth of the truss, therefore, give the chord stresses. The stresses in the verticals are the shears in the section passing through the vertical but not cutting a diagonal. The stresses in the diagonals are equal to the shear in the panel multiplied by the length of the diagonal and divided by the effective depth. The chord stresses are all checked by checking the last one in the same way that the stress diagram was checked.

In making a detail drawing of the truss, the gauge line of the angles which have but a single gauge line is made to coincide with the stress line,

and in the case of the angles having two or more gauge lines that nearest the outstanding leg is used. This leads to a slight but unimportant eccentricity, but, what is more important, it gives a simple detail for the shop, which is always to be considered unless stresses are caused enough larger than those computed to cause an important weakness in the design.

The gussets should be so designed that there will not be a weakness in shear. This is particularly liable to occur in the end gussets. By cutting the gusset with a section and applying our three fundamental rules, this shear may be easily obtained. This is usually the weakest through a line of rivets.

When the ends of the diagonals are cut, either make a square cut, or if beveled have it bevel from the outstanding leg back toward the center of the truss. Never have the leg project to a point. This facilitates the cutting of the angle in the shop, a matter always to be considered.

In buildings where there are large halls, it sometimes becomes desirable to build a truss a whole story deep to carry the floors above. In this case the chords are frequently subjected to bending besides the usual truss stresses. In computing this bending it is not usually necessary to use as large a moment as would be computed by assuming the chord composed of beams each one panel in length. In general it is safe to consider these beams as continuous, that is, to take 8/12 of the moment as usually computed. There are, however, frequent exceptions to this rule which if overlooked would lead to dangerous design. One of these exceptions arises from large concentrated loads giving a bending stress which would be large in comparison with the direct truss stress, or more particularly a large bending in one panel and a much smaller bending in an adjacent panel. In such a case the difference in these two bending moments might be too great for the joint to take care of. Unless the end of the truss is very stiff it is usually best to figure the bending in the end panel as at least 8/10 of that of a simple beam. After the usual stress and bending stress have been computed they should be added together to see that they are not greater than should be allowed. It is safe, as a rule, to allow this combined stress to run up to 16,000 pounds per square inch, but care should be taken that there is sufficient lateral stiffness. A good section to use where the bending is considerable is two channels back to back with the gusset between them. Especial care should be taken in such design that the lateral stiffness is ample. A flange plate added on the top of the truss will often accomplish this result in as satisfactory a way as any. Wooden beams are not a good brace for steel compression members, but a concrete slab within certain limits may be very good. General rules which will fit all cases are very hard to make.

DECORATION & FURNITURE

Details from the Library of the Hotel Gouthiere, Paris

HIDDEN away in unsuspected byways of Paris there still exist many old treasures of an architectural nature, left alone and deserted as the march of progress leads past them and on beyond. One such example is the old structure at No. 9 Rue Pierre Bullet, more fortunate by far than many an old Parisian house in having come into the possession of an owner who values it on account of its traditions as well as for its architectural merits. This old building, some illustrations and details of which were presented in *THE ARCHITECTURAL FORUM* for March, 1924, was built and occupied by the famous craftsman in metal of the time of Louis XVI, Pierre Gouthiere, and as it stands, surrounded by the shops and homes of small tradesmen, it might be regarded as a symbol of the downfall of French art when the splendor and dignity of the monarchy were swept away by the ruin and chaos which were the result of the revolution.

The grace and elegance and the charm altogether French which characterize the exterior of this old house are found to prevail within. Illustrations, details and a description have already been given of the vestibule or entrance hall and of a small salon, but equally as charming are the staircase hall with its marbleized walls and its graceful circular stairs and the adjoining rooms, one of which is the library of which illustrations and drawings are given here.

One's first impression of this room is that it is light and delicate in detail and exceedingly rich in color. The wood is of mahogany with a rich, reddish brown finish. The small engaged columns flanking the bookcases rest on a ledge of white marble which runs completely around the room, interrupted only by the openings. This marble ledge is moulded only where it slightly breaks around the columns and pilasters below. The room is a model of good taste in design, detail, balance and color.

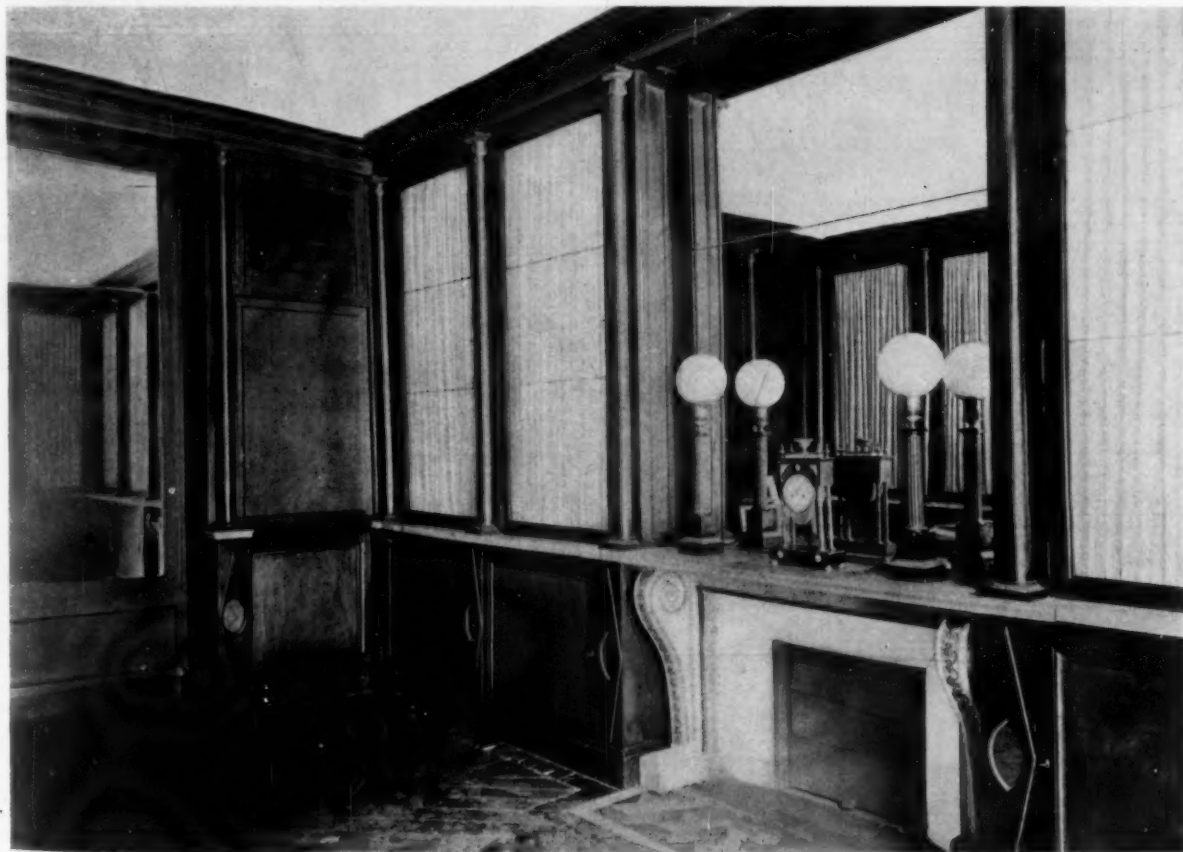
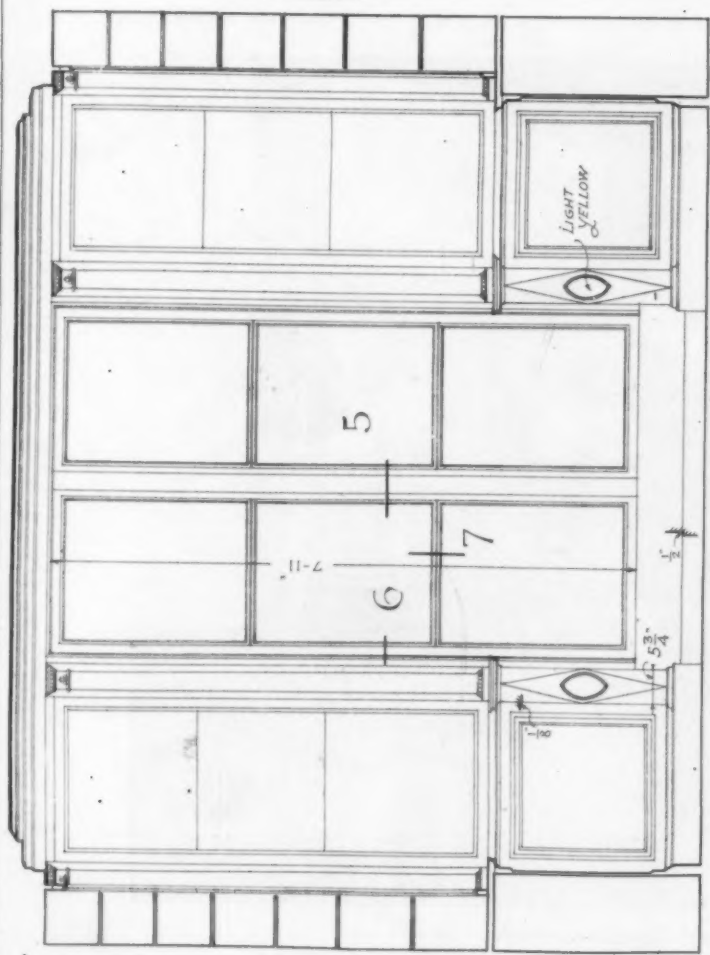


Photo. Giraudon

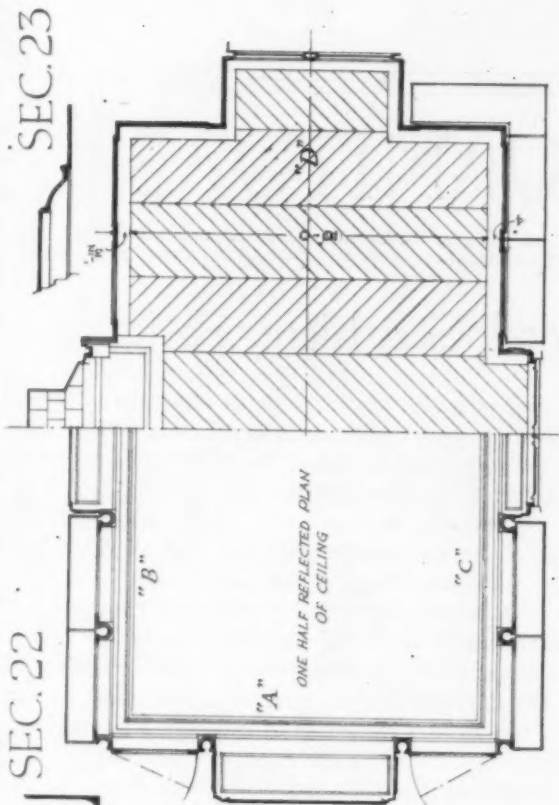
The Library in the Hotel Gouthiere, Paris

SEC. 23

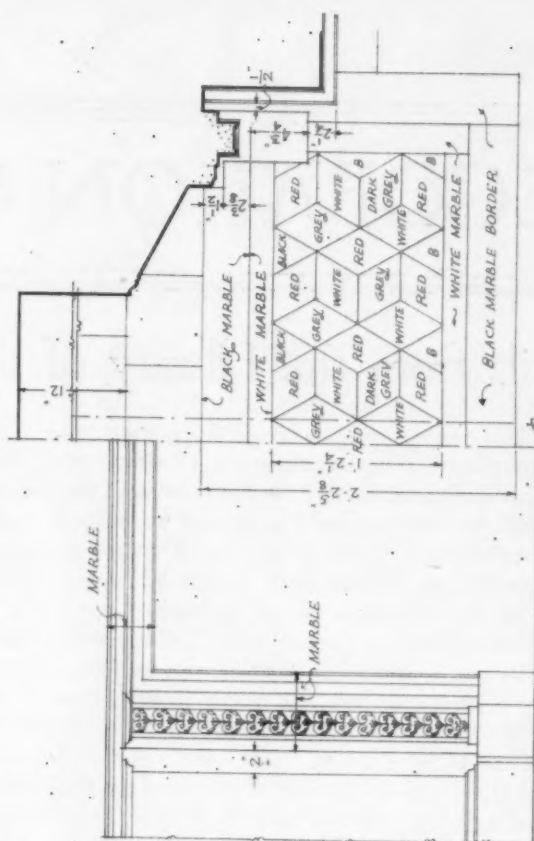
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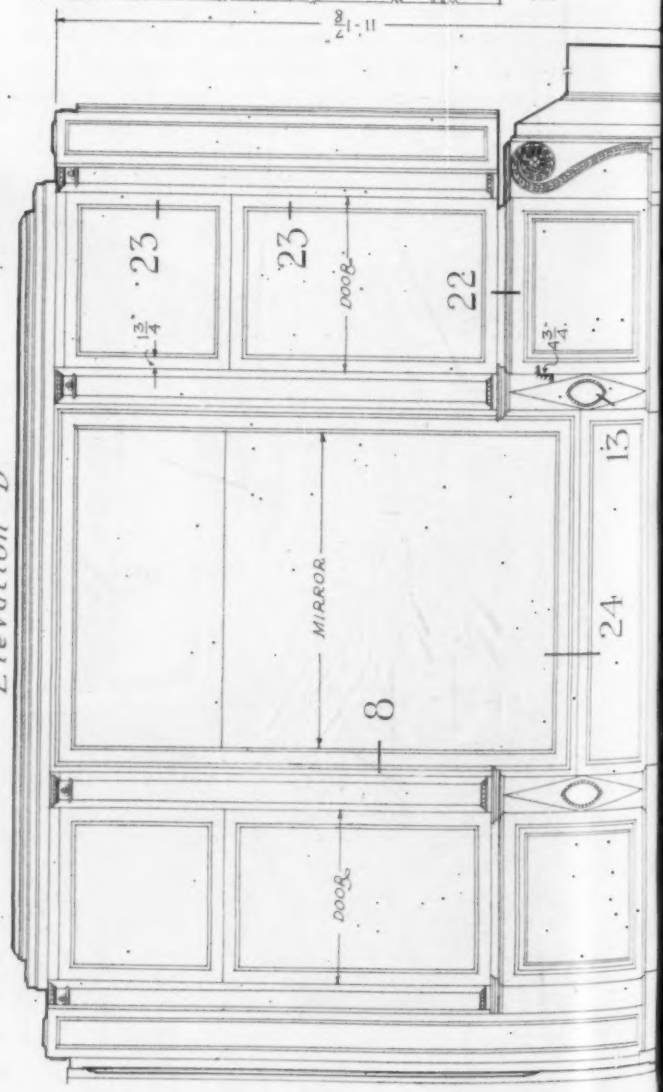
Elevation "D"



PLAN
Scale $\frac{3}{16} = 1 \text{ Ft.}$

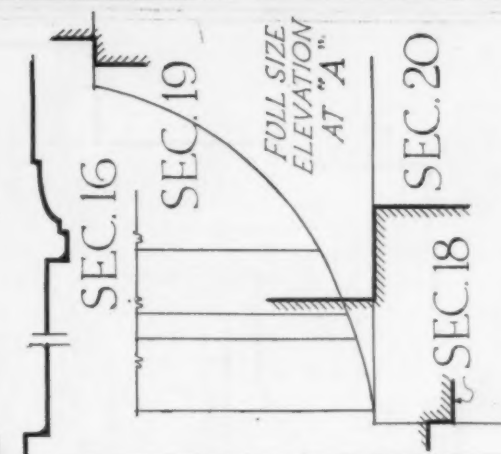
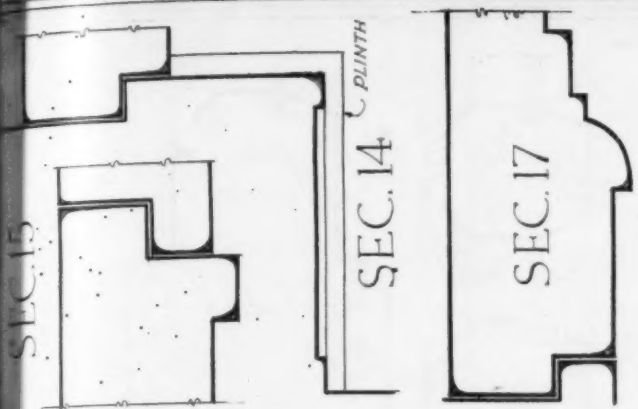


PLAN
Scale $\frac{3}{4} = 1 \text{ Ft.}$

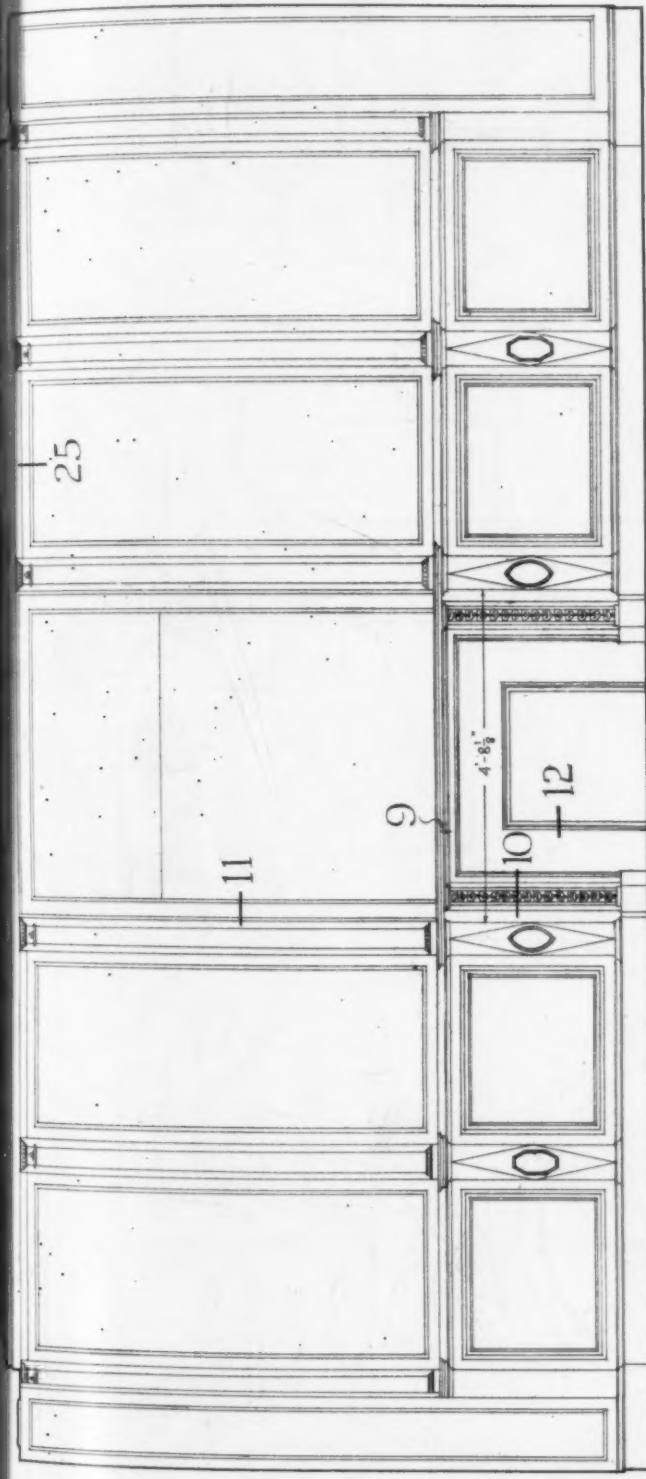


ELEVATION OF MANTLE
Scale $\frac{3}{4} = 1 \text{ Ft.}$

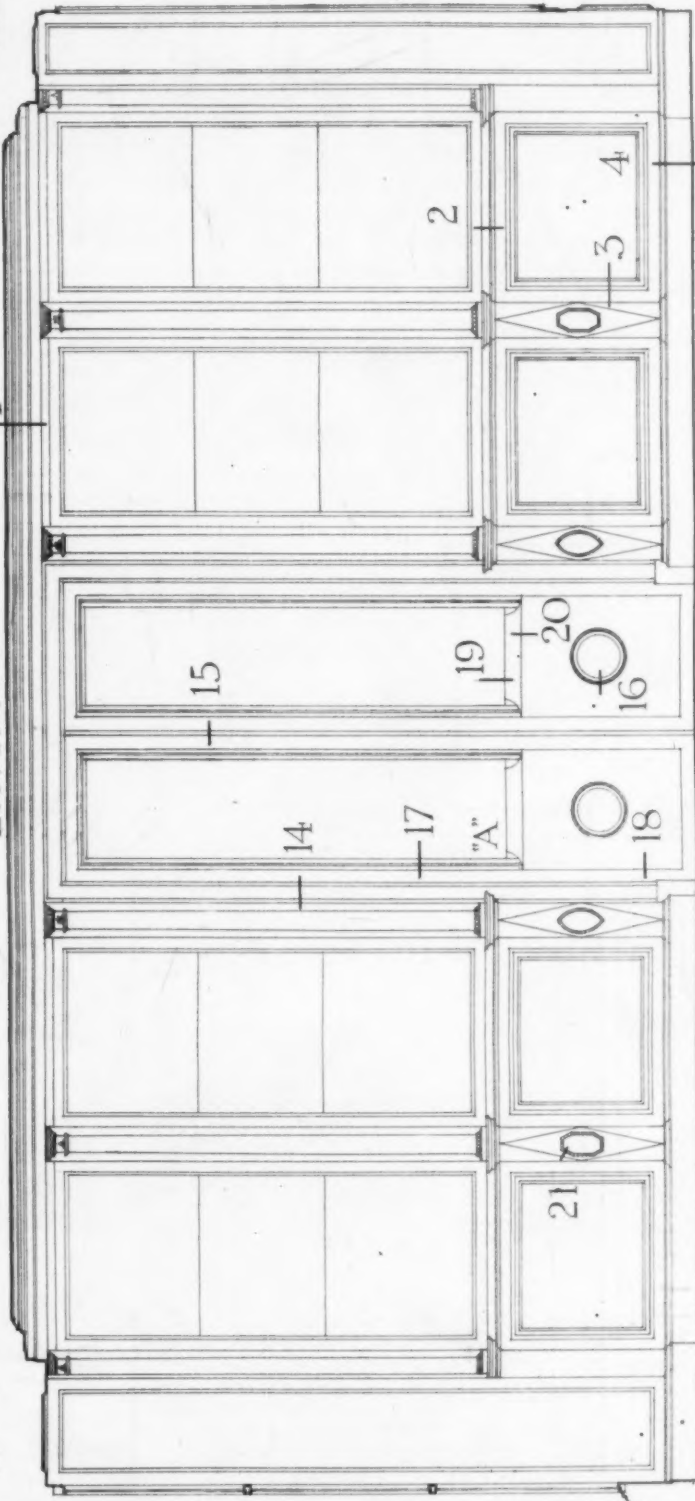
HOTEL GUTHRIE



DETAILS OF
LIBRARY
HOTEL GOUTHIERE
PARIS



Elevation "A"



Elevation "B" Scale $\frac{3}{8}'' = 1' - 0''$

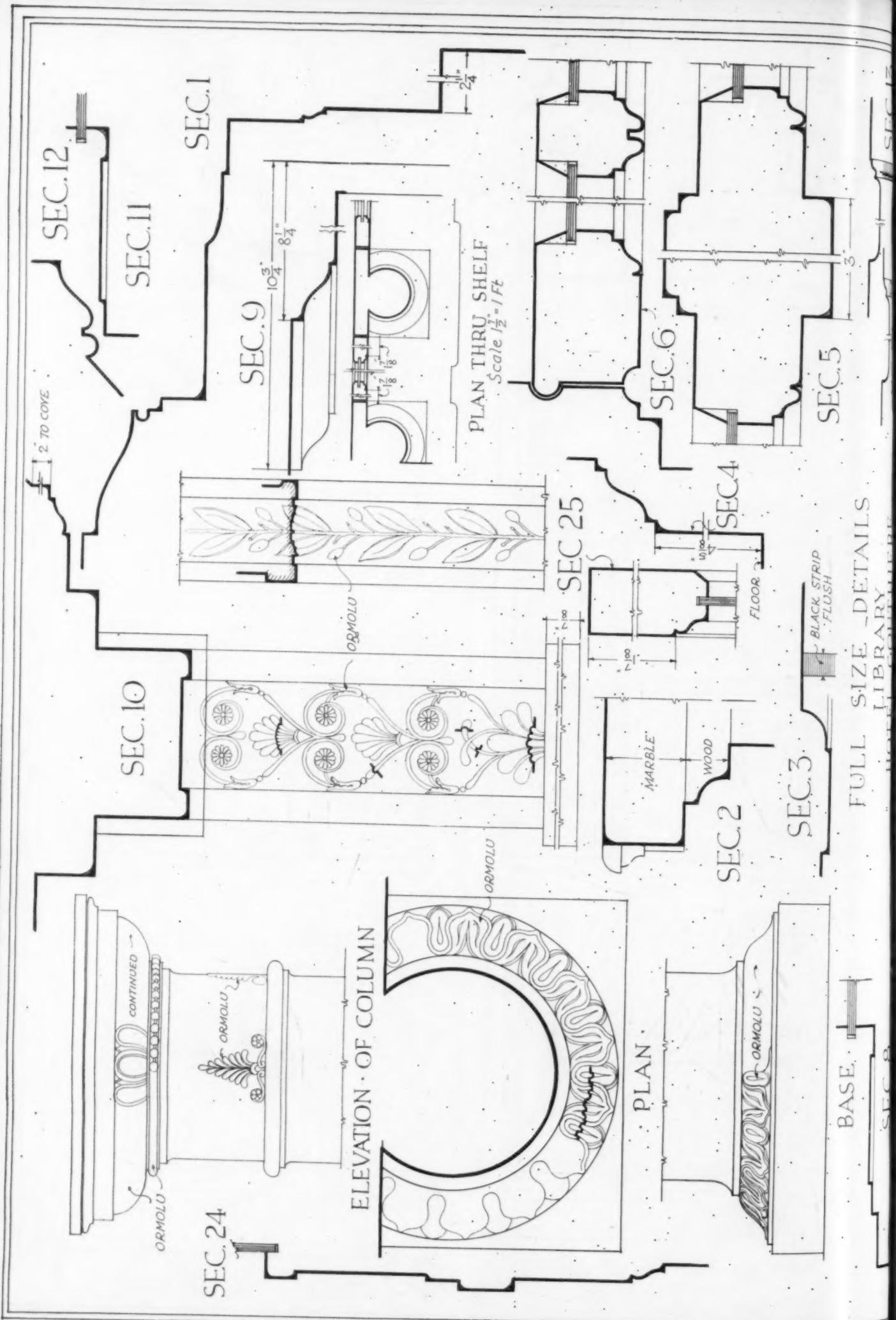


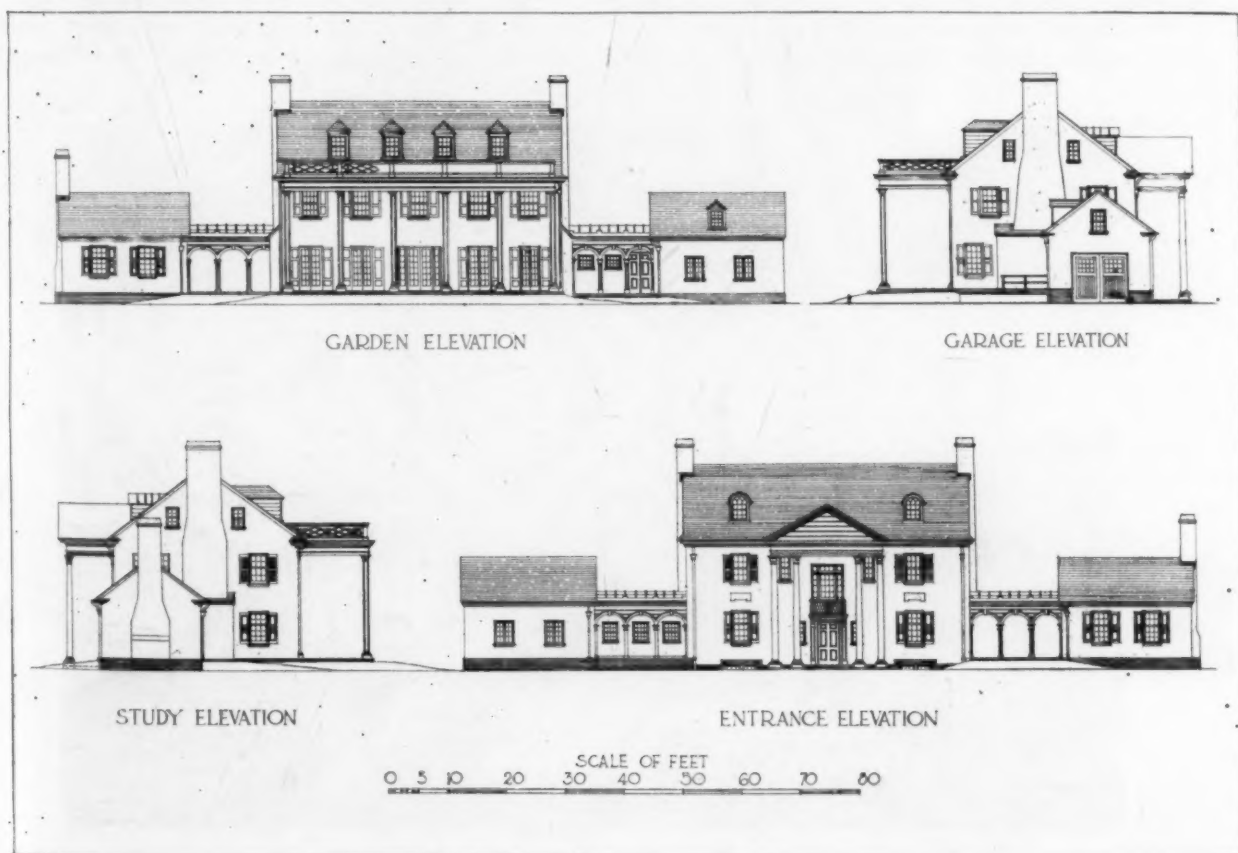
Plate Description

Chamber of Commerce Building, Newark. Plates 77, 78. This 10-story office building, of which Guilbert & Betelle are architects, built in 1922 primarily to house the Chamber of Commerce, was planned to accommodate stores on the two lower floors and offices on the upper floors. The auditorium of the Chamber, which seats 320, together with committee, director's and secretary's rooms, is located on the third floor. The exterior of the building is buff brick with limestone trimmings and cornice on the upper stories. The richly carved entrance door, the work of Maxfield Keck, is in pink Tennessee marble. The construction is fireproof, with steel skeleton frame and concrete slab floors. Vacuum steam is used for the heating. The Public Service Company furnishes electric light and power. The electric elevators are finished in bronze. Hollow metal frames and sash are used for all the windows. The corridors have marble wainscots with plaster above, and terrazzo floors. The cost of this building was 68½ cents per cubic foot.

In design, the exterior facade is pleasantly divided. This is accomplished through the use of ornamental ironwork for the window treatment of the first two stories of the building, which are occupied by stores. In the center of this design of ornamental iron and

brass, is the richly carved marble entrance door, which suggests the Renaissance of Spain and Italy.

HOUSE OF DR. HAROLD L. SPRINGER, Rockland, Del. Plates 79-80.—In this Colonial mansion Brown & Whiteside, Architects, have produced a design of unusual consistency and charm. Following examples found in Virginia, the plan shows a main house with two low buildings connected with the main house by arcades. A typical Colonial arrangement of rooms has been followed on the first floor, a hall extending through the house with stairway at one side, which rises above the main entrance. At the rear of this hall a door gives access to the broad covered porch designed in the style of that at Mt. Vernon. On one side a large living room opens onto an arcade which leads to a study in one of the small buildings. On the opposite side of the hall is a square dining room, with pantry and kitchen in the rear. Through the kitchen, which occupies the one-story arcade at this side of the first floor, access is had to the garage, the other small building. Four bedrooms and baths are located on the second floor, connecting by a service stairway with six maids' rooms and bath on the third floor. An unusually fine feeling for scale and proportion as well as accuracy in Colonial detail adds to the house's charm.



HOUSE OF DR. HAROLD L. SPRINGER, ROCKLAND, DEL.

Brown & Whiteside, Architects

EDITORIAL COMMENT

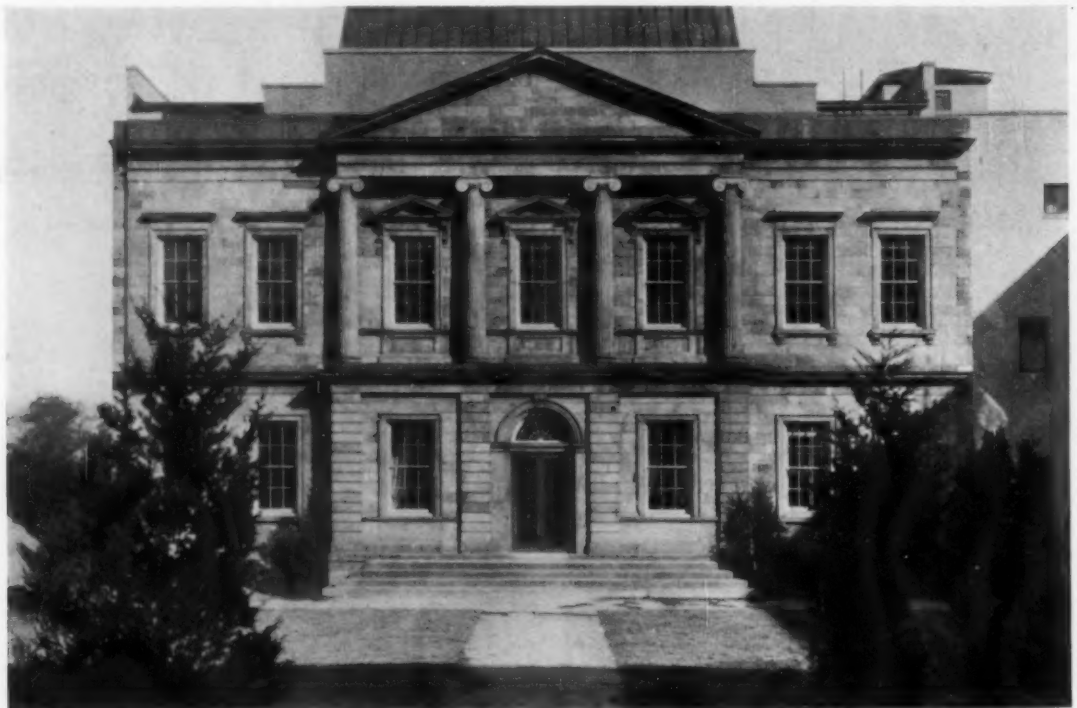
IT is now nearly two years since announcement was made to the architectural and artistic world of the gift by Mr. and Mrs. Robert W. de Forest of a new wing for the Metropolitan Museum, in which were to be permanently housed the many examples of early American art, already collected by the Museum during the past 15 years. These collections, which comprise some of the best examples known of early American furniture, metal work, ceramics, glass, textiles, wallpaper, portraits, and interior architectural woodwork, have now been so arranged as to re-create the atmosphere of typical interiors of the seventeenth and eighteenth centuries.

In collaboration with the Museum authorities, plans for the new American wing were prepared by Grosvenor Atterbury, Architect, in such a way as to make possible the installation of a number of old interiors taken from buildings in practically all of the 13 original states, showing the gradual development of American domestic architecture from Puritan days down through the Colonial and Revolutionary periods to the days of the early Republic. These rooms include examples of old kitchens, living rooms, dining rooms, drawing rooms and ballrooms, accurately rebuilt with practically all of the original details. Reproductions have been used

only in some of the earliest rooms where it was impossible to remove the originals intact. Each room contains furniture, hangings, and various ornaments, decorations and details of equipment appropriate to its period. Space does not here permit a detailed description of each room, but we are glad to announce that a series of articles by Richard F. Bach of the Museum's staff, is shortly to appear in THE FORUM, and will take up in turn an analytical description of each of the periods of early American art and architecture, now splendidly represented.

The atmosphere and character as well as the purpose of the new American wing have been successfully established by the court or entrance facade of the building, for which has been used the gracefully proportioned front of the United States Assay building, erected a century ago at No. 15 Wall Street.

The opening of this new wing on November 10 was an event of importance in the history of American art. The influence of this notable collection of many of the finest examples of early American art will by no means be confined to the present generation; on the contrary it will stand forever as an enduring monument to the artistic appreciation and skilled craftsmanship of the men to whose struggles were due the solid foundations of the Commonwealth.



The New American Wing of the Metropolitan Museum, New York

Grosvenor Atterbury, Architect

Front from the Old United States Assay Office, Formerly at No. 15 Wall Street, New York

BOOK DEPARTMENT

The Modern English Small House

FOR centuries the English have excelled in giving to their architecture a character which is definitely and unquestionably English. The genesis of their Gothic may have come from France and their Queen Anne may have been inspired if not imported from Holland, but when once appropriated a type was changed, modified and worked over until its character ceased to be French, Dutch or Italian and was essentially English. In no field have English architects and builders been more unfailingly successful than in that

of domestic architecture, and to narrow the field still further, in their small house or cottage architecture. Indeed the English cottage has been famous ever since the annals of British architecture were first recorded, and in every age, from that of Shakespeare to the present, writers have written of the English hearthstone—not so much that of the castle as of the small manor, the farmhouse or the better class of cottages.

The "modern English style," or what is now being called by that name, while borrowing from many architectural types cannot be said to belong to any. It makes use of many materials and indeed has been formulated with a view to using certain building materials of modern invention; its design is straightforward and its plan simple. It is quaint without being freakish, and picturesque in the best sense of the word without being exaggerated or affected. It is in fact homelike and appropriate, and being appropriate it might be said to be merely the present century's version of what was current in England during the era of Queen Elizabeth or the period of George III. It is representative of the present stage of an architecture which is in constant evolution. The type, indeed, well expresses the characteristics which have always distinguished English architecture—solidity, a considerable degree of dignity, reserve which sometimes approaches what seems to be reticence, and above all a clothing of utility with an attractive garb, which suggests one definition of architecture—"the art of building beautifully."

Into this volume there have been gathered illustrations, exterior and interior, of quite a number of houses of what in America we should call "moderate size," together with some smaller houses and a few which

seem to definitely and unquestionably qualify as "bungalows," and among the names of architects whose work is illustrated are many of the foremost among English practitioners of domestic architecture. The houses are all of the modern English type and are fully representative of the breadth or range which the style affords, built of brick, stone, stucco on various bases, frame, and combinations of all these, while roofs are of materials such as would be used in America, with the addition of actual "thatch" which is entirely beyond our reach. The

plans of the houses are simple and direct, as plans of modern English houses should be, and include in each instance rooms which while few in number are of fair sizes, all this being just about what obtains in the United States at present.

Illustrations of interiors are numerous and show arrangements of interior architecture and disposition of furniture and decorations which are pleasing and full of helpful suggestions without being widely different from what would be found in houses of like sizes and character in the suburbs of almost any American city.

What is particularly admir-

able in the book is the number of illustrations and plans of gardens in connection with the houses, the houses and the gardens being so disposed that they sustain definite relations to each other, but this delightful detail of planning the English taught us long ago, and we have not been altogether backward in profiting by their excellent teaching. What someone has called "the Communism of Architecture" in America has brought into use motifs from many countries and of many periods, as a survey of our suburbs would show. Many of these types are appropriate for the frequent use which is being made of them, though few are more suitable than this type which has been evolved by present-day English architects as a setting for life much similar to what obtains in America.

The work upon the whole is an excellent presentation of an architectural type in which Americans are manifesting increasing interest and which is highly practical.

THE SMALLER HOUSE. Being Selected Examples of the Latest Practice in Modern English Domestic Architecture. 191 pp., 10 x 12 ins. Fully illustrated with half-tones. Price \$7.20. The Architectural Press, 9 Tothill Street, Westminster.



A House at Hampstead Garden
Welch & Hollis, Architects
An illustration from "The Smaller House"

Interiors and Interior Decoration

*Recent constructive and practical
works on Interior Architecture*

ENGLISH DECORATION AND FURNITURE OF THE LATER 18TH CENTURY

By M. Jourdain

An excellent presentation of work of the period, and particularly of what is comparatively moderate in scale and cost. The volume deals with architecture, decoration and furniture of types which have attained a permanent popularity in America.

269 pp., 10½ x 13¾ inches.

Price, \$25

THE DAVANZATI PALACE

By Louis Conrad Rosenberg

Illustrations from recent photographs of the various rooms of the palace, and working drawings of every detail in which architects or interior decorators would be interested, such as bases, columns, capitals, mouldings and corbels; mantels, beamed and coffered ceilings, door and window trim, paneled doors and inner blinds or shutters; wrought iron bolts, hinges, knockers and escutcheons. The most complete and useful work on the Davanzati Palace.

70 pp., 10½ x 13½ inches.

Price, \$10

COLONIAL INTERIORS

By Leigh French, Jr.

Invaluable to architects interested in the correct development of the Colonial interior, since it includes many working drawings of wall paneling, mantels and over-mantels, door and window trim, china closets and stairways. Simple as well as more elaborate work is included, and only old work is illustrated.

125 plates, 9½ x 13 inches.

Price, \$15

THE ART AND BUSINESS OF INTERIOR DECORATION

By B. Russell Herts

Written by a successful and well established New York interior decorator on the artistic and business aspects of decoration. It discusses some of the business problems, and treats of the decoration and furnishing of private houses and apartments as well as of hotels, restaurants, theaters and other public or semi-public places.

134 pp., 7¾ x 10¼ inches.

Price, \$5

ARCHITECTURE OF ROBERT AND JAMES ADAM

By Arthur T. Bolton

This excellent work is among the best on the subject, for it sums up the work of the Adam brothers in the field of small or medium-sized domestic architecture and decoration. Valuable for its floor plans and illustrations of little known interiors.

2 Volumes, 10½ x 15½ inches. 800 pp; and about 700 illustrations, plans and drawings.

Price, \$60

SOME 18TH CENTURY DESIGNS FOR INTERIOR DECORATION

A work rich with suggestion for the architect or interior decorator working in the later English periods. Based on the work of Abraham Swan, the volume contains many drawings of wall treatments for rooms of different sizes, their paneling, mantels, door and window trim and other details.

Text and 76 plates, 10½ x 15½ inches.

Price, \$7.50

REDEEMING OLD HOMES

By Amelia Leavitt Hill

A valuable work on the alteration and restoration of country houses. Particular attention has been given to the planning of interiors and to the decoration and furnishing of the different rooms.

160 pp., 5½ x 8¼ inches.

Price, \$3

COLONIAL LIGHTING

By Arthur H. Hayward

The important subject of lighting Colonial houses is studied. The various forms of lighting fixtures used during early and later Colonial times are illustrated and described, with particular emphasis given the later period.

159 pp., 6 x 9 inches.

Price, \$7.50

Character in any building is largely dependent upon the design of its interior architecture and the handling of its decorations. The growing importance of this part of an architect's practice warrants close study of interior design and decoration with which these works deal.

ROGERS & MANSON COMPANY

383 Madison Avenue
New York

ENGLISH FURNITURE; ITS ESSENTIALS AND CHARACTERISTICS. By John C. Rogers, A.R.I.B.A. With foreword by H. Avray Tipping, M.A., F.S.A. 188 pp. 6 x 9 ins. 150 illustrations and diagrams. Price \$7.50. Charles Scribner's Sons, New York.

THE interest in English furniture which is increasing each year is accompanied by the publication of many works which deal with the subject from such varied and differing points of view as that of the antiquarian, the dealer, the architect or interior decorator, and the collector. It is true that whatever be one's direct interest in the subject, study of English furniture involves the consideration of much the same subject matter,—the following of one of the great historic periods of furniture-making closely upon the heels of another, the varying forms and different woods used, and the relations which the furniture of the various periods sustained to the interior architecture of the houses themselves and to the customs of the people who lived in them.

Many of the works published to aid in studying English furniture are given up so largely to discussing matters which while interesting themselves do not relate directly to the subject that their value to the furniture student is rather lessened, and almost all these volumes, owing to their sizes and to the luxurious form in which they are brought out, are likely to be beyond the reach of the very students who would profit most by possessing them.

This volume is of a character which will interest classes as varied as students, collectors, architects or decorators, and practical cabinet makers, particularly designers and draftsmen engaged on working drawings for the reproducing of old furniture. The excellence of the illustrations should be of inestimable value in avoiding the false note which is so frequently struck, to the complete ruin of so much work of this type today.

The story of English furniture has been frequently and ably told and illustrated, but extremely little has been presented upon the practical side; yet questions of material and construction are valuable to the collector and even more valuable to the workman who is reproducing old English furniture, the neglect of subtle but important details often being responsible for the lack of character or feeling which these reproductions so frequently display. We do not know of many works on this subject where so much of value is given in small compass. Excellent half-tone illustrations accompany exceedingly well written text, but by far the most valuable detail is the drawings, of which there are a great number, illustrating such important details as the various forms of the cabriole leg; stretchers of chairs, tables and other pieces; cornices and profiles on tables, secretaries and wall pieces of different kinds, and numerous drawings, of such items as dove-tailing, tripod tables and stands, drawer construction and turned spindles.

A HISTORY OF ORNAMENT. Volume II., Renaissance and Modern. By A. D. F. Hamlin. 521 pp., 6 x 9 ins., 430 illustrations, with 4 in color. Price \$5. The Century Co., New York.

THIS valuable volume might be best described by saying that it is a companion and sequel to the well known work by the same author on "History of Ornament, Ancient and Mediæval." This later work follows much the same general plan as the earlier volume, but it discusses the motifs and the style of ornament as they

have been developed in Europe and America during the modern period, and as Mr. Hamlin observes in the preface, not with the work of civilizations long dead but with work of our own times or at least of a period of which our own time is the child and direct heir. The age of the Renaissance is a period from which we are separated in time rather than in character, culture and sympathy. We fall naturally into ways of thinking and ways of designing taught us by the whole movement of the Renaissance, and the ornament of that age is therefore full of suggestion, inspiration and example for present-day use.

Planning the work in some 15 chapters, the author discusses under each heading the ornament which is identified with that period, ornament of every description, not only what is strictly architectural, but also what is applicable to furniture, fabrics, pottery of many different kinds, glass, metalwork and almost everything else for which ornament could well be used. Illustrations, which are numerous, have been selected with great taste and care, and since many are in full color the student of design obtains some idea of the importance of the use of color as applied to ornament. Even the comparatively recent art movements receive due recognition in the discussion of ornament, considerable attention being given to the development in different European countries of the "art nouveau" movement and the more recent revival of interest in America of the late Georgian type of ornament which is so much used today.

THE BOOKPLATE ANNUAL FOR 1924. Edited by Alfred Fowler. 58 pp., 9½ x 12½ ins. Price \$5. Alfred Fowler, Board of Trade Building, Kansas City.

A BOOKPLATE frequently possesses a value as an excellent example of some form of graphic art as well as a utilitarian value in establishing the ownership of a book. The several centuries during which *ex libris* labels have been in vogue have seen the use of vast numbers of bookplates, interesting as being indicative of the pursuits, tastes and hobbies of their owners, and affording opportunity of expression which is not always given even in the selection of the volumes which the labels adorn. Many of the most interesting bookplates have always been those of architects, and an interesting study might be made of architects' bookplates alone.

Collectors of bookplates are more numerous than might be supposed, and in addition to various periodicals which cater to the interests of collectors there appears each year *The Bookplate Annual*, the volume for 1924 having just been issued. Replete with reproductions of bookplates of various types, the *Annual* contains an essay by Gardner Teall on "The Art of Sidney L. Smith," a number of whose bookplates are shown, and articles entitled "Bookplates as Works of Art," by Ralph M. Pearson; "Sidney Hunt's Bookplates," by James Guthrie; an illustrated catalog of the Ninth Annual Exhibition of Contemporary Bookplates; a new and enlarged Directory of Bookplate Artists, and a revised Exchange List of Bookplate Collectors. The volume possesses an interest which is manifold, for in addition to the presentation of countless designs of bookplates it affords suggestions which might well lead to the production of many more, and the volume is beautifully printed and bound and made in an interesting form.

HISTORIC TEXTILE FABRICS By Richard Glazier, Headmaster of the Municipal School of Art, Manchester, and Author of "A Manual of Historic Ornament." 122 pp., 6½ x 10 ins. Price \$8 net. B. T. Batsford, Ltd., London; Charles Scribner's Sons, New York.

STUDENTS of design find that a great part of the subject matter with which their researches have to do is supplied by textiles of different kinds. The nations of ancient and mediæval times, with all their pomp and splendor, developed many arts and crafts in which design played an important part, but perhaps none of these arts was so indissolubly bound up with the industrial, civic and religious life of the people as the art of weaving, which in its different forms supplied hangings for the interior, fabrics for countless other domestic uses, and material for apparel, not only during life but also for clothing for burial of the bodies of the dead. The very extent to which weaving entered into the lives of all peoples, ancient or modern, is doubtless the cause of the existence after many centuries of textiles of various kinds, in making which the matter of ornament or design was of great importance. Thus along with the weaving of the simplest of linen or cotton cloths there went the making of the famous Mosul fabric, sometimes called "woven air," the famed woolen shawls of Cashmere, the magnificent cloth of gold from Bagdad, and the sumptuous velvets of Venice, Florence and Genoa.

Since the world as a whole has grown quieter, more gray and subdued than in the glorious days when these resplendent fabrics were in frequent use, the textiles, such as still exist, have been garnered for the most part into the collections of great museums, where in addition to being safe, they aid in promoting the study of design.

This volume discusses the study of textile design of periods both ancient and modern, and since the subject by reason of its very nature depends very largely upon illustration in order to be understood, the illustrations are as complete and as lavish as could be wished. The author's treatment of the design used in western Europe is extremely well done, and the mediæval and Renaissance fabrics of Italy, France and England are made the subjects of full and helpful chapters, with a particular study of the textiles of Spain, into the design of which there entered so much Moorish influence. An important part of this valuable volume on textile design is that devoted to fabrics in which the ornament is not produced while the textile is being woven upon a loom but by printing upon a fabric already woven. Since the topic being discussed is design, and since design is to some extent at least independent of processes, Mr. Glazier writes of the design of the printed cottons of the East and the printed fabrics of various kinds developed in Europe and indeed still being made today.

Knowledge of design is not likely to be easily or quickly acquired. It presupposes considerable study and training in the various arts of which design is so fundamental a part, but a student not only of textiles but of any of the liberal arts would be greatly benefited by careful study of this important work. The illustrations are for the most part of fabrics which to most students would be inaccessible, and the cuts themselves are of a character which bring out the delicacy of the detail, a number of the more important being in full color. A really valuable and excellent work which deserves careful study at the hands of all students of design.

Cottages, Farmhouses and Other Minor Buildings

In England of the 16th, 17th and 18th Centuries

By LOUIS CONRAD ROSENBERG

OF ALL the architectural types, that most appropriate for American domestic use is often thought to be that of the old English cottage or farmhouse. It can be easily developed in materials of almost every kind; it possesses wide flexibility as to scale, and the character of its fenestration provides the ample wall spaces which many designers highly value for their architectural effect. Its interior is readily developed to provide

the rambling type of plan which is popular for country or suburban domestic buildings, and all in all, the English farmhouse or cottage answers every demand made by the modern home builder in the search for a practical type.



THIS important work presents half-tone illustrations from photographs or sketches of more than 100 English country houses of the cottage or farmhouse types, chiefly in the Cotswolds and in Sussex, Suffolk and Kent. It deals with the work of three centuries and illustrates buildings of several widely different kinds of old English domestic architecture, built of wood, plaster, stone, brick, or combinations of all these.

There are also given countless detailed working drawings of doorways; oriel windows; gables; chimneys, singly or grouped in stacks; decorated plaster; half-timber work; fireplaces and cornices. A book invaluable to the architect.

102 pages, 10 x 13½ inches.

Bound in cloth. Price \$15.

ROGERS & MANSON COMPANY

383 Madison Avenue, New York

BOOK DEPARTMENT

Old English Walnut and Lacquer

DURING the progress of the English Renaissance, as one style of architecture came into vogue and triumphed for a time before being followed by another, the furniture was passing through similar stages of evolution, so that at any time the accessories which went into an interior were designed and built with a view to making the most of the interior's advantages, while the interior itself was designed to create an attractive setting for furnishings, the result being that rare harmony which many architects are striving to achieve today. The furniture during that long period was made of different woods; oak, for example, being plentiful in England, was in constant use up to the time of the Restoration, when the returning Stuarts set the fashion for the walnut to which they had been accustomed in France and Holland and which held its vogue until it in turn was supplanted by mahogany early during the Georgian era which followed.

This volume, by the author of the well known work "The Present State of Old English Furniture," is a review of the walnut period, dealing also with the lacquer which was fashionable for furniture at a time which was about that of the beginning of the walnut age. The period was one when England had been absorbing for a century or more the ideas in architecture and decoration which had reached the island from several European countries and which had been sorted, sifted, and generally assimilated into what pleased the English taste and suited the English temperament, and walnut with its fine, rich grain and smooth surface, and particularly with the ease with which it could be given a beautiful finish, was found to be well adapted to the needs of furniture makers. During the walnut age there were made many of the masterpieces of furniture which are in existence even yet, each year adding something to the mellow brown or gold of their patina.

The large scale of domestic interiors of this period led to a demand for pieces of furniture which were of vigorous sizes. A favorite piece was the "bureau-bookcase," and another was the "bureau-writing cabinet," either piece being a writing desk topped by a superstructure which frequently possessed pilasters and a fully developed entablature and some sort of a pediment, generally broken or scrolled. Another piece of furniture sufficiently massive and decorative to hold its own in

rooms which were fairly large scaled was the chest of drawers mounted upon legs, this as well as the aforesaid "bureau" being of walnut which was richly figured, use sometimes being made of veneer to produce the effect of "matched" panels in drawer fronts or large surfaces, and often adorned with mounts of gilded metal or else, with gilding applied directly to the wood. One more use for walnut was in affording a ground for marquetry of woods in different colors, an art in which the craftsmen of this age excelled, producing work of marvelous fineness and beauty, particularly in the tall clocks which have never been as beautiful as during the later Stuart period in England.

The vogue for lacquer acquired a firm foothold in England about 1660 and lasted for approximately 75 years. During the reign of Elizabeth products from the Orient were at least known, and both the Dutch and the English East India Companies were formed. France and Holland were also interested in the use of things Oriental, and on the accession of Charles II this craze spread to England where it was fostered by the court. Lacquer was at first used chiefly for "bureau-bookcases" and other bulky pieces, but later it was used upon furniture



Two-Chair Back Walnut Settee (1735)

Full-page Plate Illustration from "Old English Walnut and Lacquer Furniture"

of all kinds and even on pieces of walnut, and later still the wainscoting of rooms was lacquered. So general became the use of lacquer that the process was successfully imitated by English workmen, their process being called "Japanning"; thus in time furniture of all kinds and even wainscots were being "Japanned."

As in his other works, Mr. Symonds writes with the point of view of collectors and connoisseurs in mind, and he gives considerable data which concerns the "quality" or the "state" of a piece, its general character, grain, patina, and the other points which determine its desirability. He dwells, too, as he always does, upon an exposure of the tricks and wiles practiced by those who would trade upon the gullibility of collectors by the manufacture and sale of bogus antiques—which, to be sure, are often nearly as beautiful as the genuine pieces. Few people object to the use of reproductions which are frankly sold as such, but often success in simulating age leads to palming off reproductions as real antiques.

OLD ENGLISH WALNUT AND LACQUER FURNITURE. By R. W. Symonds. 176 pp. Fully illustrated, 9 x 11 ins. Price \$8.75. Robert M. McBride & Co., New York.

Any book reviewed may be obtained at published price from THE ARCHITECTURAL FORUM

HISTORIC GARDENS OF VIRGINIA. Compiled by The James River Garden Club. Edited by Edith Tunis Sale. 355 pp., 7¼ x 9¼ ins. Price \$10. The William Byrd Press, Richmond, Va.

EARLY settlers in Virginia carved from virgin forest a land which as nearly as possible was a miniature England. Named in honor of a virgin queen, Virginia was not settled by the lowly of the earth. Scions of old families, each with its pride of birth and coat of arms, preempted the waterfronts of the James and the Potomac, and presently there began to assume form the old country houses which still survive the vicissitudes of centuries. Now to make a garden is in the English blood, and there was no old house along the James which did not possess its garden, laid out in the formal and precise manner of the seventeenth century, or the eighteenth, its gay parterres edged about with box borders or hedges, and with a riot of color supplied by many of the plants which had flourished in English gardens together with some native to America. It is not difficult to picture these old gardens at the height of their splendor when the Virginian ladies and gentlemen in their silks and laces strolled up and down their shaded lanes or alleys.

Into this beautiful volume there are gathered illustrations, plans and descriptions of many of the gardens which form parts of these historic estates. Compiled by members of a Garden Club, each of these old plantation or country houses has been dealt with by someone particularly well fitted to write regarding it. Being a work on gardens, the volume is essentially a garden book, but so intimately is a garden related to its surroundings that views, plans and descriptions of the gardens include also those of the houses to which they belong, and in this day when gardens and gardening are regarded with new interest by owners of countless country places large or small all over the land, this volume on the fine old gardens of Virginia will aid in the planning and building of new gardens, which perhaps is one of the aims of its authors. In addition to being written in a vein which is highly attractive, the volume is produced in excellent form and distinguished by many illustrations in color of gardens which are notable.

MASTERS OF ARCHITECTURE. A Series of Monographs, Issued Under the General Editorship of Stanley C. Ramsey. Inigo Jones, by Stanley C. Ramsey; Sir John Vanbrugh, by Christian Barman; Nicholas Hawksmoor, by H. S. Goodhart-Rendel; Sir William Chambers, by A. Trystan Edwards. Each containing about 28 pages of text and 34 half-tone plates 7½ x 10 ins. Price \$2.50. Charles Scribner's Sons.

IN the building up of an architect's library attention must be paid to a number of different departments. Design, construction, ornament, furniture and interior decoration, and the history of architecture are all important, and so too is the field of biography, the history of individual architects or perhaps of architectural firms, which naturally involves some study of their work and their influence both as individuals and as architects upon their times. The field of biography has perhaps been neglected in behalf of other kinds of architectural publishing which have seemed to have more immediate interest or more direct appeal, but there are both interest and importance in whatever aids in securing that "background" which is so important to the proper appreciation of architecture to both the layman and the architect.

The profession, in its present sense, is of no great age, for during many centuries knowledge of architecture was part of the equipment of a master builder—or perhaps, differently put, master building was one of the functions of an architect. At any rate, the names of but few great architects have survived up to the time of say Inigo Jones, and we search almost in vain for the names of the architects of the Gothic cathedrals. When a name is found, it is more than likely to be that of some ecclesiastic—some prince-bishop, whose enthusiasm led to his projecting building operations on a great scale in which he himself perhaps functioned ostensibly as architect and presided over a staff of workmen and craftsmen who did his bidding. The function of an architect, in the present meaning of the term, is therefore comparatively modern.

The volumes listed here constitute the beginning of what is intended to be a series of monographs or little biographies of men or firms of such importance that their names are written in large letters in the history of architecture. The volumes are extremely well illustrated.

STAINED GLASS TOURS IN SPAIN AND FLANDERS. By Charles Hitchcock Sherrill. 245 pp., 6 x 9 ins. Illustrated with half-tones. Price, \$3.50. Dodd, Mead & Co., New York.

THE enthusiasm of a layman for a particular form of art may sometimes mean the presenting of the art from a point of view which is quite different from that likely to be taken by someone who has made it a subject for critical study. An example may be found in General Sherrill's studies of stained glass and in the volumes, "Stained Glass Tours," in various countries, wherein old glass is visited and described. In his "Stained Glass Tours in Spain and Flanders" there is given a study of glass in the old cities of these countries. Flanders, now partly in Belgium and partly in Holland, was for more than a century subject to the Spanish crown, and from Flanders came much of the sculpture, painting, and art in other forms which even today adorns the churches and cathedrals of Spain.

The glass in most old Spanish cities partakes of many of the qualities of Spanish architecture itself. It is in a sense poignant and dramatic, its somewhat heavy Gothic differing from the delicate, airy, almost lace-like Gothic of France and the restrained, refined Gothic of England, and its Renaissance assuming a form entirely its own. Spanish glass differs from that found in France and England in several ways and particularly in its color, for with the brilliant sun of the Mediterranean the glass in Spanish churches, in order to properly subdue the light, must be of a deep and somber richness quite different from that appropriate in the less sunny portions of northern France or under the cool, gray skies of England. All the characteristics and qualities of the glass of the country are touched upon by General Sherrill in these volumes which are neither glorified guide-books nor technical treatises on glass, though they possess certain characteristics of both. It would be difficult, unless one were an experienced traveler, to plan an itinerary to include in a brief time visits to so many of the shrines of old glass, and the descriptions and illustrations of these venerable cities and their treasures of glass are presented from a viewpoint which, as already suggested, gives the studies a value which is all their own.

BOOK DEPARTMENT

Mohammedan Architecture and Ornament

STUDENTS of architecture and architectural history who look for a distinctly Mohammedan religious style will be disappointed; it would be as logical to search for a distinctly Christian type, for just as Christianity in its progress during centuries and in different countries developed many architectural styles, Islam influenced when it did not develop types which were different in northern Africa, India, Spain, Syria, and Egypt, the divergence in architecture resulting from differences in characteristics of the older civilizations upon which the newer culture was grafted or established.

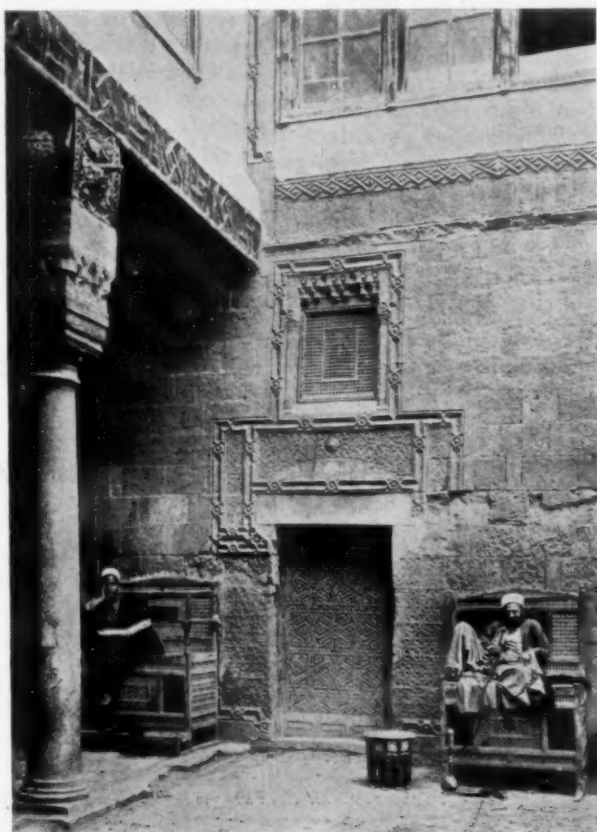
Nevertheless, in the structures which Islam reared in various parts of the world there are to be found certain characteristics which symbolize a common religious faith, sufficient indeed to mark almost anywhere a building in which Mohammedan worship is conducted. Broadly speaking, Mohammedan architecture might be described as an adaptation of the Byzantine,—an Asiatic form of the late Roman style adapted to Christian uses. The oriental strain in its composition would naturally make it readily adaptable by Moslems when they came to face problems of design, and with the Turkish conquest of Syria and Egypt such buildings as the *Takiyyah* at Damascus were based on the model of certain churches at Constantinople. Among the details of Mohammedan architecture which may be attributed to a Byzantine origin are: certain forms of vaulting; arcades supported upon columns; dossierets; wooden tie-beams across arches; carved beams in carpentry; mosaic; marble linings and dados; bronze furniture and window fittings; windows of pierced or reticulated marble, and the use of alternating stripes of red and white, yellow or black in facades and sometimes in the vousoirs of arches.

Instead of a rich liturgical worship, such as was developed in the Christian Churches of East and West, Moslem worship is simplicity itself and offers but small opportunity for the employment of the splendid accessories which add so greatly to the interest of Christian churches. Worship consists chiefly of public prayer to

which worshipers are summoned by the *muezzin* from the mosque's minaret, while within little is required beyond an area unobstructed and sufficiently large to accommodate a great body of worshipers, who kneel on the floor. Liturgical arrangements do not exist excepting a niche (*mihrab*) indicating the direction toward Mecca, the Holy City, and a pulpit (*mimbar*), which in some of the later mosques frequently resembles the *ambos* of certain old churches in Italy.

For the most part Mohammedan domestic building is of less importance than that of the mosques. The temperatures which prevail in most Mohammedan countries render it necessary that the houses be built with thick walls to exclude the heat, around courtyards, and with wooden lattices or carved grilles over the oriel windows, thus giving the interiors a certain grateful shade without entirely excluding the air. The plan of the house is today practically what it was centuries ago.

In this volume Mr. Briggs considers Mohammedan architecture as it has been developed in Egypt and Palestine, in both countries grafted upon an earlier architecture of which many characteristics persist. Even richer than its architecture is the Mohammedan use of craftsmanship in manifold forms. Reference has already been made to the carved



Courtyard of an Old House in Cairo
Illustration from "Mohammedan Architecture in Egypt and Palestine"

wood screens or lattices which cover the windows of Mohammedan homes and form so striking a detail in the appearance of a street in a city or village of the East, and other ways in which carved wood is used are in doors, panels for many purposes, friezes, ceilings, and for inlays of different woods or of wood in connection with mother of pearl or other substances. Much use is made of metalwork of many sorts for countless purposes. Use of glass includes the enameling which is done upon mosque lamps and other objects as well as the use of colored glass for windows of a type strongly oriental, and different from that used in the West.

MOHAMMEDAN ARCHITECTURE IN EGYPT AND PALESTINE. By Martin S. Briggs, F.R.I.B.A. Author of "Baroque Architecture." 250 pp., 9 x 11 ins. Price \$28. The Oxford University Press (American Branch), New York.

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NEW YORK

ESTIMATING BUILDING COSTS AND APPRAISING BUILDINGS. By Frank E. Barnes, 822 pp., 4½ x 7 ins. Price \$5 net. McGraw-Hill Book Co., New York:

CONSTANT changes in costs of building materials and of the labor which enters into building construction, as well as the high costs of these commodities, place heavy responsibilities upon those in charge of the preparation of estimates. There are many instances on record where some apparently trivial error, some oversight seemingly small, has caused a heavy loss to a contractor whose bid was accepted,—possibly by reason of a low price resulting from the error in question. Just because of the constant changes in prices it is useless to govern one's estimates by what may have been the cost of a building a year or so ago or even a month or two before; and since estimates must always be prepared quickly there is of course every opportunity for the making of troublesome mistakes. Much the same is true when it comes to giving figures on "appraisals." The work of insurance adjusters, real estate dealers, etc., involves much estimating of the values of buildings of various kinds, and since there are frequently large interests involved, it is quite as important to be as accurate in giving estimates in appraisals as upon new work.

This volume, prepared by the Supervising Building Valuation Engineer, New York Central Lines, deals with the subject in a way which is calculated to help the building contractor, estimator or appraiser dealing with structures of different types. Its use will not, of course, render unnecessary the care which an estimator or appraiser should exercise, but it extends many helps by giving data in forms which are quickly and easily referred to. Tables give the actual present-day construction costs of numerous types of buildings built between 1890 and 1923, and show the percentages of increase in building costs for the entire period. A contractor often knows the actual cost of some structure which is similar to that for which he may be preparing a bid but which may have been built some years before when prices were quite different. It is easy, however, by using these tables, to make a comparison of the costs of the two projects. The 29 chapter headings deal with every department of estimating, and they are so complete that by glancing over the sub-headings of the chapters the estimator would be almost certain to avoid making any important error.

A HISTORY OF ART. By H. B. Cotterill. Volume II. Later European Art, with Chapters on Oriental Sculpture and Painting. 461 pp. \$10 net. Frederick A. Stokes Co., New York.

IN the second volume of this excellent work there are covered the middle of the Renaissance period and its later development in the countries of continental Europe, while the consideration of England, into which the Renaissance was late in penetrating, includes the period of transition from the Gothic into the Renaissance. In the earlier volume the subject matter was discussed according to eras, such as the Hellenic, Roman, Byzantine or Gothic, while in this volume each of the parts or chapters deals with a single country. As in Volume I, the author deals with architecture as well as painting and sculpture, and from his viewpoint the discussion of architecture has an interest which does not always attach to that of a writer whose work gives little con-

sideration to other arts with which architecture is so intimately related. The treatment of the Renaissance in Spain is particularly good, especially the pages which discuss the Plateresque and the Rococo as made popular by Churriguera.

In the supplementary chapters devoted to the arts of the Far East, Mr. Stewart Dick, one of the official lecturers at the National Gallery, considers sculpture and painting as they were developed in India, China and Japan. These arts were influenced in their earlier stages by contact with the West, but they had during centuries of evolution an existence which was wholly independent; giving opportunity for following their own ideals, developing their own methods of technique, and building up their own body of traditions. A great part of Oriental art centers in Buddhism, which beginning in India traveled eastward into China, Korea and Japan. Few of the roads which the student of art history must travel are more difficult and devious than that which leads to an intelligent grasp upon the meaning of Eastern art, involving as it does foundation upon an abstruse religious symbolism which is unfamiliar and development by forms of technique which differ widely from those of Europe, besides being governed by canons of taste which are in themselves puzzling to Europeans or Americans. Oriental art involves considerable adherence to established conventions which persist through all the ages of painting and sculpture and which would seem to exclude all the wealth of development which these arts received at the hands of individual painters and sculptors in Europe. The art of the Far East like its civilization is reared upon a foundation different by far from that which supports art and civilization in the West, and those who would fully comprehend either have need of all the aid which writers and students extend. Study of Eastern art requires close application.

This volume, like Volume I, is lavishly illustrated with half-tones of buildings, paintings or works of sculpture which have been selected with excellent taste to illustrate and to add interest to the authors' text.

PICTURESQUE NEW ORLEANS. A Portfolio of Sketches by William P. Spratling, A. I. A. 7 x 10 ins. Price \$1.25 net. The Penguin Bookshop, 407 Royal Street, New Orleans.

AMERICAN cities which possess real charm are not many, but New Orleans would undoubtedly be included in the number, others named probably being Baltimore, Boston and Montreal. Attention is sometimes drawn to the fact that American cities are rapidly being "standardized" to the point where they look alike, and as the march of progress continues and landmarks make way for skyscrapers of monotonous similarity any charm which a city may possess, particularly the charm of architectural character, is likely to disappear. This appears to be true of New Orleans, and one who knew the "Crescent City" in say the 70s or even the 80s of the last century would miss the stately St. Charles or the St. Louis Hotel which was also known as the "Hotel Royal," not to mention countless old buildings reminiscent of the French and Spanish periods in which New Orleans was once so passing rich.

But it seems that in at least one part of New Orleans the charm of other days lingers on, and in this little

portfolio are collected sketches of a number of such old treasures as still survive. The French Quarter of New Orleans—that *Vieux Carre* which once constituted the walled city of Nouvelle Orleans—is but ten short blocks in length, from Canal Street to Esplanade Avenue, and its width, from the river to Rampart Street, is but six scant squares. Once it was a French settlement, built of wood and consisting of small one-story houses set within gardens and screened from the narrow streets by high whitewashed picket fences. In 1788, only a few years after the town had passed from the French to the Spanish domination, it was destroyed by fire. Only a few houses escaped. When it was rebuilt, Spanish architects and builders played their part in its reconstruction. The city which rose from its ashes was of brick and plaster, with arches of heavy masonry. There were barred windows and long, dark corridors. Large, fanshaped windows looked down into courtyards which held banana trees, oleanders and parterres of flowers. Houses were built flush with the sidewalk, or *banquettes*, as they were called, and balconies of delicate wrought iron overhung the streets. Social and business life centered around the *Place d'Armes*, now called Jackson Square. It was in the square that the transfers of Louisiana from Spain to France and from France to the United States took place, and in the houses and streets nearby occurred the events which made the history of New Orleans so colorful, so bizarre and so charmingly unusual.

Even as we see it today, in its dying splendor, the

Vieux Carre is the old Creole city of other days; it has a charm, a romance, a definite personality. Architects from distant cities come to New Orleans to study these old houses and to note the details of their construction, and each and every one of them finds something to interest him. One admires the wrought iron of the balconies, which cling to the mouldering walls like strips of old black lace; others study the oddly shaped windows, the heavy doors, or winding stairways.

Those who know the French Quarter will be interested in these sketches by William P. Spratling, instructor in architecture in Tulane University, for they are not only faithful records of out of the way places, but they have a decorative value of their own. Mr. Spratling understands the spirit of the old New Orleans, and he has expressed it in these pencil drawings.

THE AUTOBIOGRAPHY OF AN IDEA. By Louis H. Sullivan. Foreword by Claude Bragdon. 330 pp.; 5½ x 8 ins. Price \$3. American Institute of Architects Press, New York.

THIS work is the publication in book form of the chapters by Mr. Sullivan which have already appeared in the *Journal of the American Institute of Architects*. The book might be called a volume of memoirs or reminiscences, and it presents in a permanent form their author's well known views on a number of subjects connected with architecture. Many architects will of course dissent *in toto* from Mr. Sullivan's teachings, while those who agree will presumably require no further strengthening of their faith.

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THIS important work presents half-tone illustrations from photographs or sketches of more than 100 English country houses of the cottage or farmhouse types, chiefly in the Cotswolds and in Sussex, Suffolk and Kent. It deals with the work of three centuries and illustrates buildings of several widely different kinds of old English domestic architecture, built of wood, plaster, stone, brick, or combinations of all these.

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BOOK DEPARTMENT

Some Old Domestic Architecture of Holland

THERE are not many countries which possess an architecture as strongly individual as that which makes so interesting to the architect the tiny corner of the earth which we know as Holland. Like that of every country, Dutch architecture has been much influenced by developments elsewhere and by the borrowing and adapting which went on for centuries—and which still goes on—in different countries of Europe. To the architectural riches which during the middle ages were piled up in the region which now includes Belgium, Holland and northeastern France there was added the achievement of the Renaissance, and particularly in Holland architecture and decoration were deeply influenced by the Baroque movement, passing the Baroque on to England when, during the reigns of William and Mary and Queen Anne, Dutch forms came into vogue in English homes.

Dutch building is largely of brick. The country, reclaimed for the most part from the sea, possesses no deposits of stone, and what little is used for trimmings and for monumental building must perforce be brought from France, Belgium or Germany; of forests to produce lumber there are almost none, but from the clays of Holland there are fashioned excellent brick of a richly varied range of colors, and the Dutch builders acquired centuries ago the skill in the use of brick which by reason of different bonds and unusual methods of laying brick resulted in the fine brickwork of Holland. In Dutch architecture, therefore, there is richness achieved by use of the simplest materials; small indeed is the use of costly stone and smaller still that of more costly marble, but with brick of astonishing color values used with supreme skill and discrimination, the Dutch have created marvelous buildings, the interiors of which are rich and distinguished,—and these interiors too are secured by the simplest of materials, used with skill.

In this excellent volume Mr. Slothouwer, one of the most eminent of present-day Dutch architects, introduces a marvelous view of some of the examples of the old architecture of Holland which have been spared. Travelers think of Holland as being a land of dykes, windmills and canals, the canals, particularly in the towns,

being conspicuously in evidence. Upon them front those wonderful old houses, often of exaggerated narrowness and height, with their frankly and gaily Baroque facades, or else gravely and austere reserved with the "stepped" gables which one always associates with Holland. An old Dutch town, in fact, seems to be made up almost wholly of facades, for in a country so tiny space is necessarily precious, and the old cities were laid out with thrifty economy of land so that the great number

of buildings placed in solid rows give to a Dutch town the appearance of being all shop facades or house fronts. But how strong and varied was the character which the old Dutch builders could secure with the simplest of means and within the smallest limits! Even the byways of old Dutch towns possess their share of beauty, and the older houses of what we like to call the "working classes" present an appearance of dignity and vitality which is amazing. An area even smaller than would be taken up by the home of a mill operative in the dreary factory districts of Philadelphia could be turned by an old Dutch builder to excellent account; one might feel sure that behind its pleasantly dignified facade there would exist a tiny garden, and even had the custom of the time demanded a "front porch" upon which the family could be ex-

hibited, the old builder would have managed it somehow. Whether modern Dutch architecture is maintaining the character of the old is a question which admits of considerable difference of opinion. One fears that it isn't!

And then the heightened charm of the old Dutch interiors! No wonder the old painters made them the subjects of their masterpieces! Visions come to mind of open timbered ceilings, leaded glass in windows of exaggerated height, furniture heavy and massive without lacking a certain grace, shining brasses, and tiles; and Delft used in every imaginable way adds to the effect.



Two Old Houses at Enkhuizen

An illustration from "Old Domestic Architecture of Holland"

OLD DOMESTIC ARCHITECTURE OF HOLLAND. Edited by F. R. Yerbury, Secretary of The Architectural Association. Introduction by D. F. Slothouwer. Measured Drawings by E. R. Jarrett. Text and 102 plates, 9½ x 11¾ ins. Price \$7.20. The Architectural Press, 27 Tothill Street, Westminster, S. W.

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GREAT STYLES OF INTERIOR ARCHITECTURE. By Roger Gilman, Dean of the Rhode Island School of Design. 264 pp.; 126 plates; 6 x 9 ins. Price \$7.50. Harper & Brothers.

IT might be thought that the publication during a brief period of time of so many works dealing with interior decoration would result in glutting the market created by interest in the subject. Even a casual examination of this recent work, however, proves that while it handles what is necessarily the same subject matter, it treats the topic in a new way in that instead of approaching it from the historical standpoint, relating the progress of the periods of interior architecture and decoration to the reigns of various monarchs or the rule of different dynasties, it follows what might be called the evolution of ideas,—the stages of progress from the time of the mediæval period in Italy until that in England when after the end of the eighteenth century the wane of the vogue of the Adam style led to chaos and loss of popular interest in the subject excepting such as was manifested in the various "revivals" which came after.

Perhaps it would be impossible when writing upon a topic already so abundantly covered to present anything of paramount interest which is fresh and unknown, but Mr. Gilman arranges in a guise new and attractive matter already well known even though not always fully understood, and it is useful to a student to have pointed out the various paths or roads which lead to the same ends. We particularly admire the way in which the author recognizes what we ourselves are likely to call the "Stuart" period. Most writers apply the term "Jacobean" to the entire period during which England was ruled by the house of Stuart, but we are apt to use "Jacobean" as defining the reign of James I, and the term "Stuart" what followed the Commonwealth, ending with the reign of Queen Anne who as daughter of James II belonged to the Stuart family.

Several pages of excellent bibliography are included, and one detail which is so good that it might well be widely copied is the arrangement of the illustrations. Instead of being scattered through the text, where they merely perplex and annoy the reader, they are grouped at the end of the volume and in such order that the reader can easily and quickly refer to them.

MODERN ENGLISH ARCHITECTURE. By Charles Marriott. 268 pp.; 6 x 9 ins. Price \$7.50. Charles Scribner's Sons.

THERE is a particular interest in our observation of the development of architecture and building in England, possibly the interest which attends watching the solution of problems which are similar in many respects to those which engage the attention of architects and builders in America. The English architectural publications show occasionally work which is not exactly what we expect the English to produce, but these examples are exceptions to the rule which shows adherence to a standard which is generally high.

The English are fortunate, of course, in having a definite and consistent architectural tradition. For more than four centuries there has been passing a succession of stately architectural types, each reaching its culmination before giving way to, or rather being merged with,

the style next to follow, and these centuries have left in the old civilization of England enough of the slowly accumulated results of building to influence present and future work. Then too, the character of the population of England was fixed centuries ago and has never been changed. Since the Conquest there has been no great movement which could change the race, and as generation has followed generation the character of the English has become more definite, all this being as different as possible from what prevails in a land possessed of comparatively little in the way of architectural tradition and inhabited by people recently come from every country under heaven and guided by nothing definite or stable in the way of tradition of any sort.

In this volume there is presented a layman's survey of building in England during a period covering roughly the last one or two decades, useful as affording a cross-section of what is being done. The volume is to some extent in the form of an essay and to some extent historical, giving the author's views of the theory of architecture and its history, besides reviewing the work which is selected for special mention,—work in such widely separated fields as the designing of churches, public buildings of different kinds, schools, residences urban and rural, and many other types including the "industrial villages" or "housing groups" which the English handle so successfully.

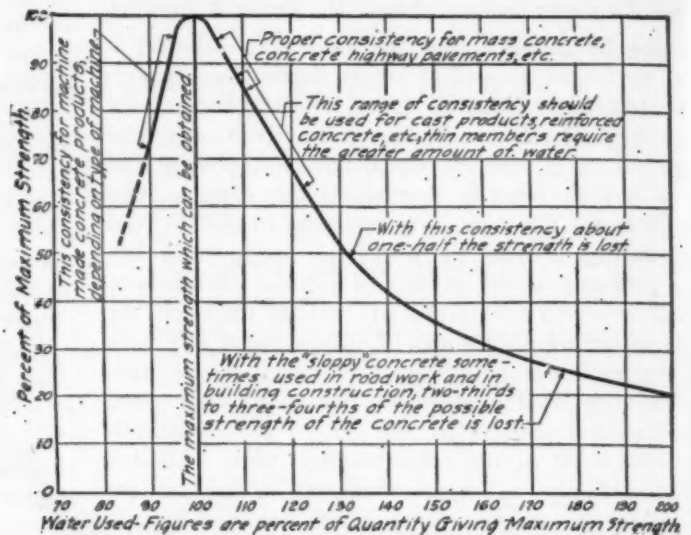
An examination of the illustrations in the volume shows a strong adherence on the part of English architects to the English Renaissance,—their use of forms being not precisely that of any of the types generally included in the term but made up of much the same motifs and expressing the same straightforward dignity and clothed with the grace which has for centuries characterized English building.

CATHEDRAL CHURCHES OF ENGLAND. By Helen Marshall Pratt. 583 pp., 5 x 7½ ins. Price \$4. Duffield & Co.

IN the vast literature which for many years has been growing up around the cathedrals of England, they are discussed from the points of view of the historian, the antiquarian and the architect. Most of these cathedrals are the result of building which extended over centuries, each generation of builders working in the architectural style which was in favor at the time, some indeed having parts built in many or all of the styles which were in vogue in England from the Saxon to the Perpendicular Gothic with which the Gothic age and the great church building period in England simultaneously came to an end. St. Paul's alone of all the English cathedrals is built entirely in the Renaissance style, though certain others show Renaissance detail or influence in such accessories as altars or tombs to which considerable architectural character is likely to be given.

Miss Pratt's study of each of some 33 cathedrals does justice to its historical and architectural importance. In many instances these old buildings were reared as monastic churches and became the seats of bishoprics only when the monastic orders were suppressed during the sixteenth century, and enough of each building's history is given to explain its architecture and ornament. The volume contains a valuable review of the ecclesiastical architectural styles and a particularly helpful glossary.

When One Pint of Water Wastes Two Pounds of Cement



NOTE: In general construction, the maximum strength can rarely be obtained, but it is possible to obtain 70 to 90 per cent of the maximum strength without additional expense by restricting the quantity of mixing water.

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BOOK DEPARTMENT

A Work on Old Spanish Architecture

Reviewed by HORACE MORAN

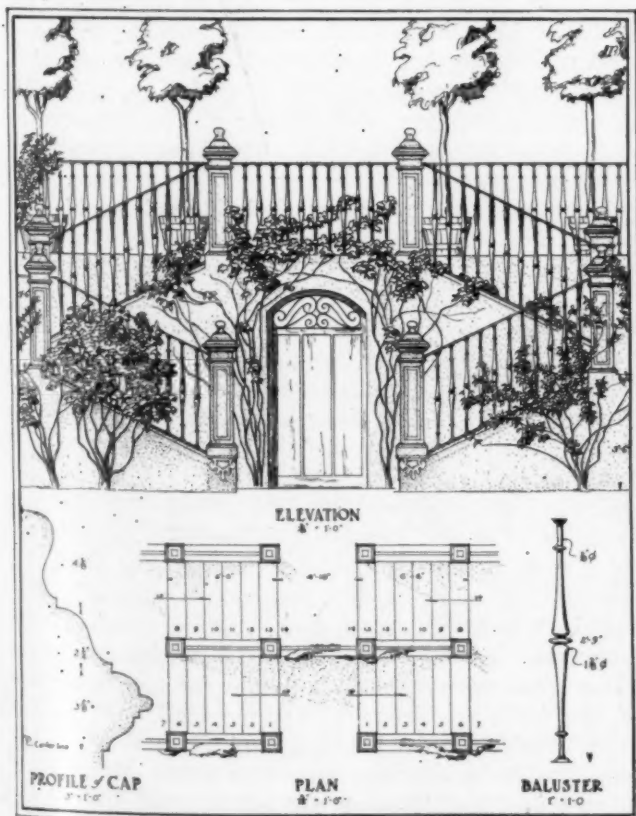
SPANISH DETAILS. By William Lawrence Bottomley. Frontispiece in color; 104 plates and measured drawings, 11 x 13 $\frac{3}{4}$ ins. In portfolio form, \$12.50; bound, \$15. William Helburn, Inc., 418 Madison Avenue, New York.

It is said that the jewels of Isabella of Spain once made possible the discovery of America, and now more than four centuries later the wealth of our land is bringing about the discovery of Spain. These two countries enjoy somewhat the same brilliant atmosphere, some of our states, such as California and Florida, having also the high summer temperature of the Iberian peninsula, and this common heritage would seem to suggest a resulting similar architecture. It occurs to us, therefore, that we may be using questionable judgment in continuing universal use of the stolid and relatively gross and drab architecture and color of the dreary Northern countries of Europe. Perhaps the present rediscovering of Spain, coupled with our success in the use of cement, may tend to sway our coming Renaissance toward an architecture more suited to those parts of America where the climate resembles that of Spain.

The recent awakening of interest in the arts of Older Spain has resulted in some excellent work in this country, but the pace of the demand has been too rapid; our

architects frequently show how little they know of that naïve spirit which is responsible for true Spanish design. A few years ago there were almost no publications on Spanish work for the use of the architect or designer in the crafts. Today the research work of Arthur Byne and Mildred Stapley Byne, who live in Spain, has given us several most learned folios on ironwork, furniture, interiors and gardens, and the versatile pen of Ralph Adams Cram has contributed appreciative and valuable notes on the architecture of Spain, recently presented in one of the architectural publications. There are also several folios published in Spain, and at least two in Germany, and a few from other sources.

Many more volumes are needed to cover the wonders of this fertile land of design, and it is a pleasure to welcome the latest contribution, the collection of choice bits of design gathered throughout Spain by William Lawrence Bottomley, and well presented in his "Spanish Details." This volume gives glimpses of interesting motifs grouped so as to be of use when studying the characteristic features of the exteriors and interiors of Spanish houses as well as the never-failing bit of garden or patio. 'Tis a pity such a volume cannot convey an



Working Drawing and Illustration of a Stairway in Seville. From "Spanish Details"

appreciation of the color which plays so fine a part in Spanish architecture, even in the stucco walls. Who, having never seen it, could grasp, for example, the beauty of the golden and siena buildings of Segovia as seen through the deep green foliage and on a background of deep blue sky? Such a work as this by Bottomley and the volumes by the Bynes, to name only a few of the recent works on Spain, should be supplemented by a visit to Spain if the wealth of material they set forth is to be used for creative work in America.

It is interesting to follow our author through Spain as we turn over the plates and trace his quest for the best things to illustrate, and we appreciate how he must have felt the restraint of confining his effort to one volume in exploiting a land so rich in architectural detail. Even Mallorca, an island province of Spain, has been included, though worthy of a volume of its own!

The wise omission of pure Moorish work we note with satisfaction, for it is not that we wish from Spain, but rather the later quaint Moorish motifs and craftsmanship, absorbed but ever evident in the dominating note of early Renaissance design and known to Spaniards as "Mudejar." The numerous scale drawings accompanying the plates would have been of more constructive service if the author had stressed details of construction and contours, with more notes as to materials and colors. Perhaps we would have preferred the pencil notes from his sketch books, from which he has with much labor worked up the plates of scale drawings. We venture to suggest also that a sharper focusing of the camera would have resulted in less diffusion of detail in the process of enlargement and reproduction. Our thanks are due Mr. Bottomley for presenting to his fellow practitioners and an interested public this fruit of his studies in Spain, and in so highly attractive a form.

REINFORCED CONCRETE AND MASONRY STRUCTURES.
Compiled by a Staff of 16 Specialists. Editors in Chief:
George A. Hool and W. S. Kinne, 786 pp., 6 x 9 ins. Price
\$6. McGraw-Hill Book Co., Inc., New York.

WITH the use of concrete now practically universal for building of the most widely different kinds it is of course vitally necessary that the nature of the material and its proper handling be well understood by architects, engineers and the workmen who actually deal with it. Perhaps the simplest of all the countless uses to which concrete is put is the building of foundations for residences; from this its use extends, when strengthened by steel reinforcing, to building bridges, dams and hydraulic structures of different kinds and for large buildings, much of which is work of great magnitude, where problems of considerable importance must be solved.

This constant use of concrete, particularly of reinforced concrete, has developed such familiarity with the material on the part of several who have used it extensively, that it is possible to formulate certain rules which are calculated to increase concrete's usefulness by making its possibilities thoroughly understood. In this volume, which is one of a series of manuals edited by Messrs. Hool and Kinne which have been appearing during the past few years, the subject of concrete is thoroughly dealt with. Beginning with "Preparation of Concrete," it follows the subject through "The Transporting and Placing of Concrete," "Forms,"

"Bending and Placing Reinforcement," "Surface Finishing and Waterproofing" "Retaining Walls" and "Chimneys," while perhaps the section which will most interest many architects, engineers and contractors who work in concrete is that which discusses "Estimating Concrete Costs." In various appendices consideration is given such subjects as "Standard Specifications for Portland Cement," "Specifications for Concrete Reinforcing Bars," and "Standard Methods of Testing for Impurities," and besides numerous diagrams and tables which are calculated to aid the concrete worker there is given a comprehensive index which adds much to the book's helpfulness. The work stands for the best practice which has been reached in the use of reinforced concrete.

THE EIGHTEENTH CENTURY ARCHITECTURE OF BRISTOL.
TOL. C. F. W. Denning, F.R.I.B.A. 191 pp., 10¼ x 12¼ ins. Price \$12. J. W. Arrowsmith, Ltd., 6 Upper Bedford Place, London.

EXAMPLES of the graceful and urbane Classical architecture which characterized the eighteenth century in England are by no means confined to London. During a great part of the Georgian era, and indeed earlier, Bath was perhaps the chief rendezvous of English fashion, and under the leadership of the Woods, father and son, there grew up a marvelous architecture; and the preservation practically intact of Bath, so that it retains its old time atmosphere as well as its architecture, is a cause for thankfulness. During much of the same period Bristol reached and maintained a high level of prosperity, and riches together with the luxury which riches foster summoned thither architects and builders who filled the old town with fine examples of what English architects were doing in the eighteenth century. The English genius is not imitative but studious, intuitive and absorbing. In architecture the English studied and assimilated the fashions of the antique world as well as of modern Europe, but transformed, adapted or blended, expressing in terms thoroughly English a type of architecture which proves that vitality and reserve can be made to go together, and that strength and delicacy are by no means irreconcilable.

While not as fortunate as Bath, Bristol is still filled with the mellow old buildings which eighteenth-century architects knew so well how to dispose around crescents, squares, places and circles,—old houses generally of brick with stone dressings, substantial without being palatial. Their brick and stone have all the subtle interest of color and texture which comes from careful, loving workmanship, and along with care and skill in the designing and construction of buildings went equal skill and care in the fashioning of such details as paneling, stairways, shutters, keystones, the graceful "hoods" and fanlights of doors, scrapers and knockers. Could anything surpass these for quiet distinction, for aloofness, reticence and withal abiding and enduring charm?

This volume illustrates and describes much of the architecture of old Bristol, and it is particularly useful to the present-day architect in that by far the greater part of the buildings described are residences not of the grandly palatial order but of a kind which would be appropriate for use almost anywhere today. Illustrations of exteriors and interiors are accompanied by quite a number of working drawings of stairways, hooded doorways, etc., and many details of different kinds.

BRIDGMAN'S LIFE DRAWING. By George B. Bridgman. 169 pp., 7 x 10 ins. Price \$5.50. E. C. Bridgman, Pelham, N. Y.

SKETCHING, of course, plays an important part in the work of almost every department of art. It is of the first importance in painting and occupies a place almost as vital in sculpture, while in architecture the value of sketching or drawing is, of course, apparent and evident, and it must be mastered by the student who would excel in any of these branches of art. Many of the great masters of architecture as well as the most eminent among the painters of past centuries have left to the modern world many of their sketches, which prove their achievements, whether as painters or architects, to have been built upon a strong and sure foundation as masters of drawing.

While sketching of all kinds possesses certain attributes in common, the very extent of the subject presupposes its being divided into many different classes, two of which are sketching as applied to anatomy, dealing with the human figure, and sketching of buildings as applied to architecture. This volume devoted to sketching as applied to the human form is by an instructor and lecturer at the Art Students' League, New York, who is also author of "The Book of a Hundred Hands" and "Constructive Anatomy." This most recent of his published works on drawing is the result of long experience as a lecturer and an instructor and deals with the drawing of the blocked human form, where the bending, twisting or turning of volume gives the sensation of movement held together by rhythm, its purpose being to awaken a sense of research or analysis of the structure.

Something of the closeness of the parallels between anatomical and architectural drawing might be indicated by certain of the volume's chapter headings: Drawing the Figure, Building the Figure, Balance, Rhythm, Distribution of Mass, Light and Shade, Mouldings, Proportion, How to Measure, all this being applied to different aspects of anatomical sketching, but holding much to interest the student of drawing of an architectural nature.

As regards mouldings: "Architectural mouldings consist of alternate rounds and hollows, of plane or curved surfaces, placed one beneath the other to give various decorative effects by means of light and shade. The human figure, whether standing erect or bent, is composed of a few big, simple masses that in outline are not unlike the astragal, ogee, and opophye mouldings used in architecture. Looking at the back of the figure, there is the concave sweep of the mass from head to neck, then an outward sweep to the shoulders, a double curve from rib cage to pelvis, ending abruptly where the thigh begins, a slight undulation halfway down to the knee, a flattened surface where it enters the back of the knee, another outward sweep over the calf and down to the heel, the whole a series of undulating, varied forms. And the front of the figure curves in and out in much the same manner, a series of concave and convex curves, and planes. The distribution of light and shade brings out these forms."

The work, carefully and thoughtfully written as it is and fully illustrated with reproductions from sketches of every part of the human frame, constitutes an important contribution to the broad subject of drawing.

OLD ENGLISH WALNUT AND LACQUER

By R. W. SYMONDS

QUITE as important in many types of architecture as interior design is the planning of furniture which goes with it. For each of the historic styles there were designed accessories which by being in agreement and harmony with their surroundings aided in creating the effect which the type made possible, easily marred by use of furniture unsuited to the surroundings.

With the architecture of no country or period was there used furniture more beautiful and distinguished than in England during the late Stuart and the early Georgian eras. Attracted by economic opportunities, the most skillful designers in Europe planned furniture which was built by the most finished of craftsmen. This was the "Walnut Age," during which were made masterpieces in walnut, and intercourse with the East brought the use of lacquer, also fashionable, and imitated presently by English workmen.



WRITTEN by one of the foremost students of English furniture, this work covers fully and completely the subject with which it deals. The design of furniture, its structure and its ornament, whether carved, inlaid or lacquered, its finish, and the care which furniture should receive are fully discussed, and there is given advice as to the identifying of old pieces and the detection of modern copies of old English furniture often sold as old to the unwary.

Intended for the furniture maker almost as much as for the designer, student or collector, the volume contains diagrams showing the details of joining, varieties of inlay, types of stretchers and spirals, and perhaps the most valuable feature of the work is the large number of excellent illustrations showing furniture of all the different kinds—bureaux, tables, chairs, stools, settees, cabinets and clocks developed in walnut or lacquer.

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BOOK DEPARTMENT

A Work on the Development of Wall Paper

Reviewed by CARROLL BILL

HISTORIC WALL PAPERS; From Their Inception to the Introduction of Machinery. By Nancy McClelland, with an introduction by Henri Clouzot, Conservateur, du Musée Galliera, Paris. 458 pp., 8 x 11 ins; 12 plates in color, 245 illustrations in halftone, and chart of periods. Limited edition. Price \$25. J. B. Lippincott Co., Philadelphia.

ONE hardly associates romance and human interest with such prosaic stuff as wallpaper, but Nancy McClelland has written a most fascinating story of its origin, growth and development. It is rather surprising that, familiar as we are with wallpaper as a necessary item of our modern domestic life, so little is known or has been written to tell us just how and why it came into being and how it progressed from its early stages of hand-painted crudity to the high degree of technical and artistic excellence of those fine scenic papers of the early nineteenth century now so eagerly sought by collectors and decorators. Not that the subject has been entirely neglected, but as much of the matter available in books is so utterly conjectural, we lack confidence in its basic facts, and Miss McClelland tells us in her first chapter that there has never been a serious attempt to study the subject from original sources, and that the chief reason for the lack of a scholarly treatment of the matter was that there were no readily accessible sources of authentic information. We admire the author's painstaking energy in unearthing from the most remote places material bearing on the subject, and her quest led through French governmental legislative archives, into private houses, attics and cellars, and through ancient English, French and German literature, occupying a period of three years' constant pursuit of the subject in hand.

The period covered by this history is, roughly speaking, from 1500 to 1840, after which date enough is known of the wallpaper industry to make further research unnecessary; from the time of the mid-nineteenth century the increasing efficiency of machine printing put a gradual end to any notable production of hand-blocked papers. The author found that the history of the development of wallpaper could be divided into periods, that each period had a real relation to those preceding and following, and that the definite purpose for

the creation of wallpaper was to produce inexpensive effects of color and texture in imitation of and in substitution for costly woven fabrics and painted decoration.

The first period has largely to do with the story of the *dominotiers*, a group of Frenchmen whose amusing early efforts in making designs of little grotesques, geometrical patterns and marbling, made possible the later developments of decorated paper for wall hangings. Following them in what may be called a second period came the making of paper intended to imitate tapestries and costly fabrics, hitherto only to be possessed by the

wealthy. The designs were laid on paper with a specially prepared varnish and chopped wool of various colors blown or dusted on so as to adhere, forming a raised pile of a luxurious texture at a comparatively low cost. Then follows a period in which there was developed paper printed to imitate figured fabrics, linen or cotton; and now the attempt, hitherto untried, was made to so arrange designs that by placing them side by side a "repeat" of pattern was obtained, and Jean Papillon, the originator of this idea, must be credited with the invention of wallpaper as

we know it today. This same Papillon furnishes us with another amusing phase of the industry in that he carried out personally all steps from the first making of the designs, engraving, painting, and coloring them, selling the finished products, and then to give full value, putting the paper in place on the walls,—truly a one-man affair, quite inconceivable in this day of labor specialists when each detail belongs to some one workman.

One of the most interesting chapters of the history is that telling of Chinese painted paper. It was customary at the conclusion of important business between great Chinese merchants and their European clients to present gifts, usually in the form of painted paper panels with designs of bamboos and landscapes, the wily Chinese keeping for their own use the more desirable panels of silk, painted with birds, flowers and figures. So it was that returning sea captains brought back these delightful and novel gifts, resulting in the sending back to China orders for more. The demand so far exceeded the supply that these Chinese papers were copied by



An Eighteenth Century Scenic Wallpaper
Illustration from "Historic Wall Papers"

Spanish Details

A Highly Practical Work on the Spanish Renaissance

By William Lawrence Bottomley



IN this volume there is presented a collection of illustrations and measured drawings of carefully selected details of Spanish Renaissance architecture. The work of a New York architect who has been notably successful in attractive use of Spanish motifs in his own practice, the volume presents not so much work of a striking and magnificent character as what is comparatively moderate in scale and therefore adaptable for present-day use in America.

The volume is replete with illustrations of well chosen, simple Spanish facades, doorways, windows, balconies, balustrades, exterior stairways and the grilles of wrought iron or carved and turned wood which are used at gates, windows and doorways. Interior details include the arcades of patios, ceilings, chimneypieces, floors, doors, shutters, wall fountains, etc., and since in most instances the illustrations are accompanied by measured drawings the reproduction of these details is not difficult.

Of all the recent works on the Spanish Renaissance this is perhaps the most practical for actual use.

Frontispiece in color; 104 plates and measured drawings, 11 x 13 $\frac{3}{4}$ ins. In portfolio form, \$12.50; if bound, \$15.

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French and English paper designers, and this really created an almost distinct period, influencing not only wall-paper but the design of furniture and lesser architectural detail as well. Some wonderful Chinese papers are preserved in this country, notably in the Hooper mansion in West Manchester, and the Dorothy Quincy House in Quincy, and the writer had the pleasure of helping to install in a sympathetic architectural setting that marvelous Chinese paper now in Mr. Merriman's house in Providence, illustrated in this volume.

The high period, we are told, of greatest excellence of technique and artistry, was that in which, departing from the strictly imitative, paper was designed and printed to produce the same effects as mural decoration, hitherto to be had only by the expensive employment of eminent artists, and to be afforded only by the rich. Reveillon, with his small capital of 18 francs but with the priceless inspiration to employ for his own designers those very painters most in vogue and to reproduce their work by means of his amazing knowledge of the technique of printing, produced panels of such a high degree of artistic merit as to make it possible to combine them with the pretentious architectural details of the period, such as carved panel mouldings and elaborate door heads, taking the place of painted decoration. We are shown illustrations of one of Reveillon's most noteworthy creations, a series of panels, "The Five Senses," classical figures and detail in tones of gray against a blue-green background.

The industry continued through the vicissitudes of the Revolution, surviving the depressing effects of the Terror in a remarkable way, where other enterprises were destroyed, and reflecting faithfully the change in taste from the delicate flowers, ribbons and lovely tints of the Louis XVI period to the harsher military spirit of the Directoire, Consulate and Empire with their characteristic detail of battle axes, lances, spears, shields and cruder color schemes as architecture and decoration mirrored the history of the times.

Miss McClelland gives us in "Period Five, or the Epoch of Scenic Papers," what is perhaps the most interesting of all the subdivisions of the subject; for the picture papers, we must admit, appeal most strongly to our fancy and illustrate by subject the close relations between France, the country of their origin, and America at the beginning of the nineteenth century. Again, they are the papers with which we are most familiar, speaking from a decorative viewpoint, and their origin in France, their journeyings across the seas in the cabins of sailing vessels, and the hanging of them in stately New England homes cannot fail to stimulate our romantic interest.

The limits of a review make impossible further discussion of the quantity of detail contained in this history of wallpaper, but mention must be made of the delightful introduction by Henri Clouzot, Conservateur du Musée Galliera, Paris, the wealth of illustrations, 12 in color and 245 in halftone, grouped very conveniently for reference, the alphabetical list of names connected with the industry from 1500 to 1840, a table of the more important French papers of the eighteenth and nineteenth centuries, a bibliography and a chart of important dates in wallpaper history. Miss McClelland's "Historic Wall Papers" is an enjoyable, valuable and most welcome addition to the literature dealing with decoration.

LUMBER AND ITS USES. By R. S. Kellogg. Revised by Franklin H. Smith, 370 pp., 6 x 9 ins. Price \$4. U. P. C. Book Co., Inc., New York.

ALTHOUGH wood is by far the most used of all building materials in America, it is surprising to find that less is known regarding its nature, properties and economical use than of most other materials. A steel rail is made according to a formula prepared by a metallurgist; there are standard mixtures for cement and concrete; the physical properties of metal and stones are accurately known; but even the best grading rules of the lumber manufacturers are only approximations to the actual values of different classes of lumber. Then too, the waste which occurs in connection with lumber manufacturing, notwithstanding the great improvements which have been made in the industry, is enormous; not more than from 25 to 50 per cent of wood in a tree, we are told, reaches an ultimate user,—a striking example of truly American waste! Because our forests have seemed to be inexhaustible there has appeared to be no need for finding uses for the portions of a tree which could not be utilized for lumber. The timber-using public has taken the cream, and no one would look at the skimmed milk. Consequently the owner of the milk could only throw it away. The toll taken by waste has been prodigious beyond belief.

Aided by the technical and statistical studies which for some 20 years have been carried on by the United States Forest Service, Mr. Kellogg here presents a treatise on wood and its uses. The physical properties of wood are discussed, its structure, and the various kinds of wood and the difference between woods of the same general kind. But perhaps the use of wood is more important as well as more interesting, and the author deals with topics such as Cutting; Seasoning; Grading; Standard Sizes; Preservatives; Use of Paints and Finishes, and much is said regarding uses of wood for various purposes in building. Mr. Kellogg sees no danger of a "timber famine," due chiefly to supervision over forests which will probably be assumed by federal or state governments, enforced by suitable legislation.

DRAFTING ROOM MATHEMATICS. Problems of the Drafting Room Simply and Clearly Explained for the Draftsman and the Architect. By De Witt C. Pond, Author of "Concrete Construction for Architects." 153 pp., 5¼ x 7¾ ins. Price \$2.50. Charles Scribner's Sons, New York.

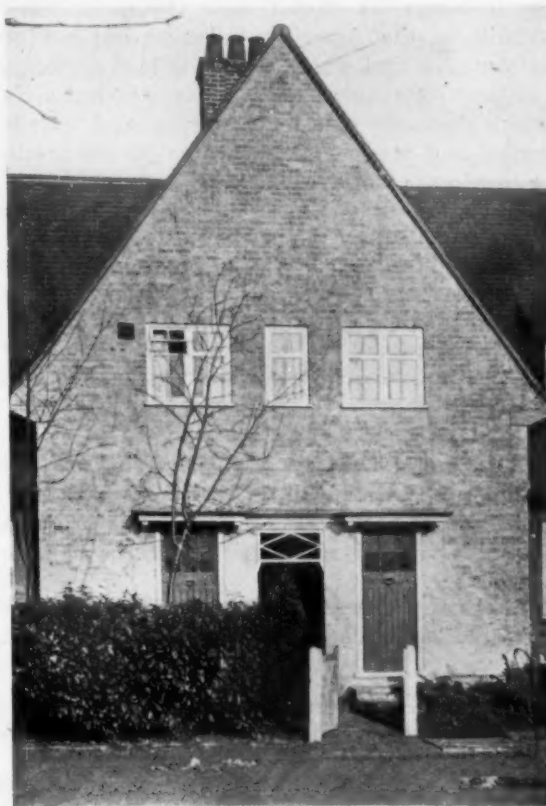
PRACTICE of architecture in certain of its phases is scarcely to be distinguished from actual engineering. In even the simplest types of building of many kinds there are such matters as strain and stress to be taken into consideration, so that even the most elementary building involves some use of mathematics. In the drafting rooms of engineers the solving of problems by means of algebraic formulæ is important, but architectural draftsmen as a general thing have more use for the kinds of calculations which enable them to determine distances and angles in cases where their structures are complicated by being designed to fit irregular plots.

This volume is a treatise upon such mathematics as are likely to be required by an architect. Written by an architect of wide training and experience, it covers in a work of ordinary size a field which is of vast importance, but regarding which there is not a great deal of information easily available. The work is well worthy of study.

Small Houses for the Community

By C. H. James and F. R. Yerbury

Foreword by Raymond Unwin



ENGLISH architects have been particularly successful with their handling of the "small house problem," whether the small houses be individual buildings or in the groups which are usual when a number of houses are erected by some one interest or by some industrial concern for housing its employees.

This book gives an excellent presentation of the best of such work, illustrations of the exteriors and interiors of houses of various types and materials and the floor plans making plain the results of economy of material and floor area which present-day building conditions demand. A valuable summing up of a subject which is of interest to architects everywhere, particularly to those whose work is largely of a domestic character.

Text, 140 Halftone Plates and Appendix, 10x12 ins. Price 31s, 6d.

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OLD HOUSES OF CONNECTICUT. Edited by Bertha Chadwick Trowbridge, and Charles McLean Andrews, of Yale. 519 pp., 8½ x 11 ins. Limited Edition. Price \$25. Yale University Press, New Haven, Conn.

SOCIETIES which exist for the safeguarding of patriotic tradition may well find an additional aim in furthering the preservation and study of early architecture in America. The early settlers in what are now the states along the Atlantic seaboard, when once they began to build permanent homes at all, built them of strength and solidity which have enabled them to last in many instances for almost three centuries; but even homes built by the American colonists are not proof against the ruin and decay which follow neglect, and many of these venerable buildings have reached a condition which demands that their architectural excellence be recorded and preserved unless their merits are to be forever lost to the world. The important work of rendering possible the study of the old houses of Connecticut, has been undertaken by the Society of Colonial Dames, and is promoted in this handsomely produced work, compiled from material collected by the Committee on Old Houses, and published on the foundation established in memory of Calvin Chapin, Class of 1788, Yale College.

The parts of Connecticut covered by this study yield an astonishing number of fine houses, which range from the simplest and most austere buildings to others which are of surprising luxury and richness. The work deals with 64 of these old structures, each house being given many illustrations of exteriors and interiors. The value of the volume to architects is great, since in addition to

views of exteriors and interiors there are floor plans of the buildings and measured drawings of many details as well as carefully compiled lists of the materials used. The volume is literary and historical as well as architectural, and the illustrations and plans are accompanied by descriptions which aid in visualizing these old houses.

ARCHITECTURE IN ENGLAND. By Cyril Davenport. 154 pp., 4 x 6½ ins. Price \$2.40. E. P. Dutton & Co., New York.

IT is not easy and perhaps not even possible to present in a volume of "pocket size" a view of a subject as large as English architecture which would be sufficiently comprehensive to possess value for the student or interest for the casual reader. For this reason it might almost seem to be a mistake to issue a new work which differs little, if at all, from quite a number of small volumes which aim at nothing more than being synopses or outlines of more complete works. It might be replied, of course, that it is not easy to persuade the public to study architecture at all, and that to encourage such reading the matter must be frequently presented anew, condensed into small compass and so written that no heavy demands are made upon either the imagination or the understanding of the reader. There is always hope that by suitably encouraging a reader his interest may be captured unawares, and thus there be one more student of history for whom the architecture of the ages actually lives anew.

This little volume may therefore be regarded as a missionary effort which might well perform excellent work. It has been well written and adequately illustrated.

COLONIAL INTERIORS

Photographs and Measured Drawings of the Colonial and Early Federal Periods

By LEIGH FRENCH, Jr., A. I. A.

INTERIOR woodwork during the Colonial and early Federal periods was exactly what is demanded for "Colonial" interiors today. The character of workmanship in the colonies insured craftsmanship of excellent quality, and this, together with design carefully studied from the simpler contemporary English work, resulted in woodwork which it would be difficult to improve upon. For this reason close study is being made of such old American interiors as still exist, and measured drawings make possible the reproduction today of much of the finest woodwork of the seventeenth or eighteenth century. These

forms, while they involve not a little subtlety in the details of design, demand merely the use of simple mechanical processes which are not beyond the skill of any reasonably proficient woodworker, sometimes of an ordinary carpenter.

125 plates, 10 x 15 inches. Price \$15



IN this valuable work on the early American periods there are given illustrations from new photographs of interiors of the time, many of which are little known. These illustrations are of rooms of different kinds and of widely different types,—the early, somewhat severe type as well as that which was later and more refined and luxurious. Valuable illustrations are supplemented in many instances by invaluable working drawings,—details of wall paneling, mantels, over-mantels and fireplace surrounds; door and window trim; china closets; newels, balusters and other details of stairways, and designs for the

stenciling of floors, together with notes on the colors originally used. It is a volume which in its practical usefulness will be of great value to architects whose work involves much use of early American interior design.

ROGERS & MANSON COMPANY

383 Madison Avenue, New York

THE EDITOR'S FORUM

TRADE SCHOOL HELPS BUILDING

THE "Help Wanted" advertisements in city newspapers still call for skilled workers in the building trades at large wages, and both employers and organized labor are trying to find ways to meet the shortage. A part of the problem has been solved by the New York West Side Y. M. C. A. Trade Schools, which started more than a year ago with courses in bricklaying, tile setting and plastering, and have succeeded in giving training to over 1,400 students. The primary purpose of these schools was to help men to help themselves,—to find better opportunities for achieving success and happiness through employment at useful work, even if it involved discarding their "white collars." This is in keeping with the ideals of the organization in all of its activities.

The sort of contribution to the building industry that has been made is illustrated by one group of students which worked at tile setting in the new high school building at Scranton, Pa. Charles J. Bogert, a leading authority in the tile setting industry, says: "I never saw a better piece of work in all the years that I have been connected with the industry. Some of these corridors are from 30 to 50 feet long, and you can look along any joint and you will find it as true to line as if laid up with a chalk line." Another graduate tells how he is succeeding in business for himself. He ordered \$1,400 worth of materials the first month, increased this to \$3,000 the second month, and sees his way clear to a prosperous future. The students come from all parts of the world. Among the 27 enrolled last month, 17 different countries were represented.

The building trades school is training men sufficiently to go out, get a start, and "make good." Contractors are continually asking for graduates. The school is making a definite contribution toward the success and happiness of young adults mechanically inclined and capable of quickly mastering the practical fundamentals of bricklaying, plastering and tile setting. It is making a sizable contribution to a national construction program that urgently needs mechanics more than it needs anything else.

ARCHITECTURAL PHOTOGRAPHERS

THE FORUM is glad to make note of the fact that Tebbs & Knell have been awarded the contract for photographing the work of Graham, Anderson, Probst & White of Chicago, preparatory to the publication in book form of the work of this firm which succeeded Daniel H. Burnham & Co. Tebbs & Knell for many years, together with Paul J. Weber, Kenneth Clark and John Wallace Gillies, have been contributing photographs to THE FORUM's pages.

A NEW LIGHTING PUBLICATION

A PUBLICATION of considerable value to architects in drawing up plans for ornamental exterior lighting is being distributed by the Westinghouse Electric and Manufacturing Company. The publication, which is known as "Number C 1674," is entitled, "Ornamental Brackets, Newels and Lanterns." As it has been issued primarily for use in architects' offices, the filing classification of the American Institute of Architects has been included on the cover of the book to facilitate its use.

A great number and variety of exterior lighting units, artistically designed for use in the illumination of entrances and facades of public buildings, the gateways of residences and private grounds, and the passageways of bridges and viaducts, are included. For every type of fixture included in the booklet, a clear photograph and a dimensional drawing are provided, together with a brief description. Views of actual installations of many of the units are also contained.

These paragraphs from the foreword to the publication indicate the purpose for which it is issued:

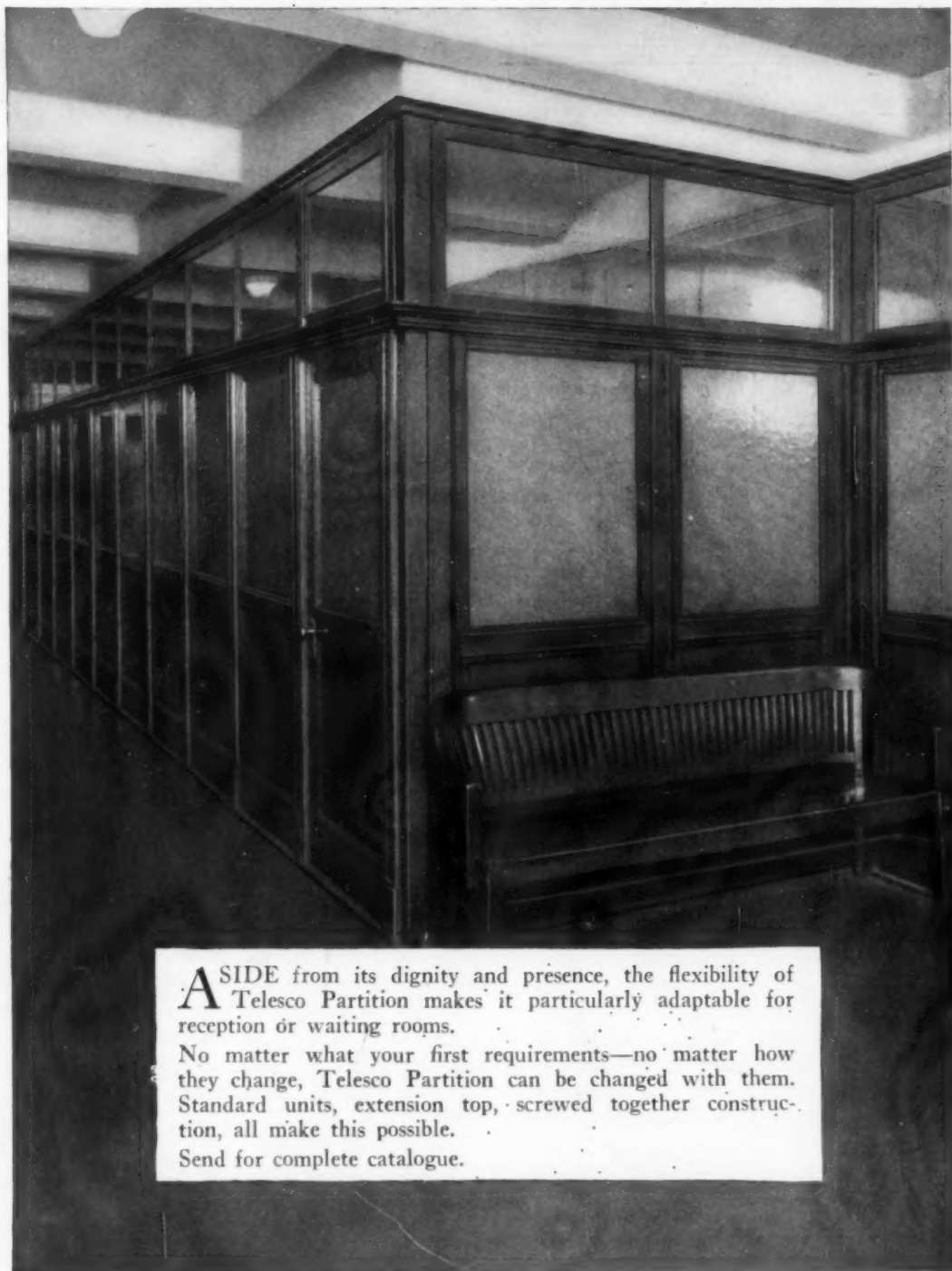
"Modern lighting science has made it possible for the architect or illuminating engineer to retain the decorative motifs of the early centuries in combination with the most efficient equipment for distributing light.

"Effectiveness in a lighting unit is a happy combination of lamp, glassware and light control. Efficiency need not be sacrificed to secure an artistic *luminaire*; in fact, the more ornate designs usually permit the inclusion of scientific equipment as readily as the simpler types of lighting fixtures."

LANDSCAPE ARCHITECTURE AT U. OF P.

THE scholastic year of 1924-1925 will see the inauguration at the University of Pennsylvania of a five-year course in landscape architecture which will be open to both men and women, leading to the degree of Bachelor of Landscape Architecture.

The new course is framed on the conception that landscape architecture is a fine art, and it will comprise a range of studies, both technical and cultural, deemed necessary to a thorough preparation for this art. The trustees have placed it under the direction of Robert Wheelwright, Landscape Architect and Member of the American Society of Landscape Architects. A graduate of Harvard University (A.B., 1906 and Master of Landscape Architecture, 1908), Professor Wheelwright has achieved success as a practitioner in this field, both in New York and Philadelphia, while as a member of the American Society of Landscape Architects he was one of the founders and for ten years an editor of its official organ, *Landscape Architecture*.



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THE EDITOR'S FORUM

AWARD OF BOOTH SCHOLARSHIP

THE first award of the George G. Booth Traveling Fellowship in Architecture has just been made by the College of Architecture of the University of Michigan. Of the nine competitors who made entries, the designs of two were of such nearly equal merit that the jury decided to divide the \$1200 income of the Fellowship between Marion F. Blood, a member of the Class of 1924, and Ralph R. Calder, who was graduated in 1923. Both have had office experience in addition to academic training, and both are students of high scholarship. The annual income of the Fellowship being \$1200, each received \$600, to which Mr. Booth generously added \$500.

ROTCH TRAVELING SCHOLARSHIP

THIS year's award of the Rotch Traveling Scholarship was made to Eugene F. Kennedy, Jr., of Boston, by a jury consisting of Ralph Gray, George Howe and Otto Faelten. The trustees of the Rotch Fund concurred in the award, and the Boston Society of Architects voted its approval. Second place was given to Leo. A. Whelan, also of Boston, who received the prize of \$100 in gold.

The income from the Rotch Fund provides for the annual payment to the recipients of \$1500 for a period of two years. During the 40 years that the fund has been established, an equal number of young men have enjoyed its benefits. One-half have been Massachusetts men and the remainder have come from 12 other states and foreign countries, the only condition for competitors being that they be citizens of the United States, under 30 years of age and must have been engaged in professional work during two years in the employ of a practicing architect resident in Massachusetts.

A MEMORIAL EXHIBITION

AT the Art Center, 65 East 56th Street, New York, there is being held during the summer an exhibition of work by the late Bertram Grosvenor Goodhue which pertains to printing and book illustrating. In addition to the drawings for the bulletin of the Maryland Cathedral and for the well known Cheltenham type, there are copies of Rossetti's "The House of Life," "The Love Songs of Proteus," by Blunt, and "Sonnets from the Portuguese," the borders and initials of which were designed by Mr. Goodhue, while perhaps the most interesting item is the edition of the Book of Common Prayer, the type and decorations for which were designed by Mr. Goodhue for the Merrymount Press, while the illustrations were by the English artist, R. Anning Bell. The exhibition proves anew the value of Mr. Goodhue's skill in this work.

10,000 ARCHITECTS IN 1926

IN forming a plan for developing the membership of the American Institute of Architects, according to the *New York Times*, it has been estimated that by 1926 the number of architects in the United States will be 10,000.

The Institute, it was said, must enroll 4,000, or 40 per cent of this number, in order to make it truly representative of the profession. The Institute now has 2,774 active members. Last year a net gain of 230 was reported. This year the net gain is only 153. There has been a gain of 1,332 in three years.

The New York Chapter, founded in 1867, has nearly 400 members. The Brooklyn Chapter, founded in 1894, has about 100, and the New Jersey Chapter, founded in 1900, has more than 130 members. Broad plans of expansion, both in the public interest and in the direction of more effective professional organization, will be carried out during the administration of Mr. Waid, culminating in the next national convention of the Institute, to be held in New York in 1925 in connection with a great international exhibition at the Grand Central Palace.

THE BEAUX ARTS

IN speaking in Boston lately before a body of architectural students, Professor Albert E. Ferran, who has been teaching at the Massachusetts Institute of Technology, touched upon the early history of a great institution.

In introducing his subject the Professor gave a brief outline of the *École Nationale et Speciale des Beaux Arts*, which was founded by Colbert in 1648, under the title of *École Academique*. It received its present title in 1793. Pupils are admitted from the age of 15 to 30 years, after examination, in one of the sections of painting, sculpture and architecture.

The number of students has always been limited to those who were fitted by temperament and inclination to do the work required. In 1720 there were only 22 students, although the school had been established more than 70 years. Unless the student obtains the required number of mentions and medals he is sent back to do the work over again.

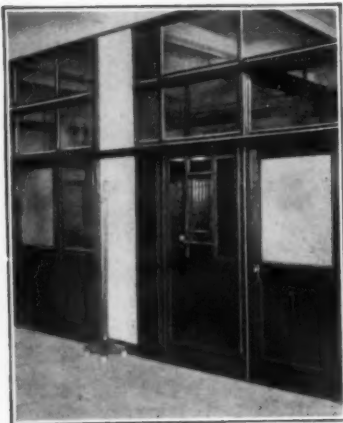
In 1761 Blondel started his academy, which by his *Cours d'Architecture* did so much to stimulate an understanding and appreciation of the art of building. In 1785 the *Prix de Rome* was established, and Fontaine was the first *pensionnaire* of this famous institution. The speaker told of the origin of the loge and the atelier systems, the latter by Blondel's son, the famous Pontist. During the revolution the teachers carried on the work from their private funds until the authorities realized that this was properly a government function.



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The ARCHITECTURAL FORUM

VOLUME XLI

NUMBER 3

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PARKER MORSE HOOPER, Editor

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ALBERT JAMES MAC DONALD
1889 - 1924

It is characteristic of Albert James MacDonald that he never sat for a formal studio photograph. This picture, taken last spring in Venice, will be recognized by his friends as an excellent likeness.

ALBERT JAMES MAC DONALD

1889-1924

The drowning of Albert James MacDonald at Wareham, Massachusetts, on August 17, 1924, brought to an end a life far too brief, but one filled with useful work and crowned with achievement. Blessed with a temperament always buoyant and genial and with a rare capacity for friendship, he overcame obstacles largely by the sheer force of a magnetic personality. A plan once fully made was likely to be followed through with a quiet, steady, driving persistence which disarmed criticism, brushed aside objection, and eventually attained the end held in sight from the beginning.

Born in Brookfield, Massachusetts, December 17, 1889, and raised in the neighborhood of Boston, he was educated in the public schools and later studied architecture at the Massachusetts Institute of Technology, beginning his career in the office of Aymer Embury II of New York.

Mr. MacDonald early appreciated the opportunities offered the occupant of an editorial chair,—opportunities not so much for personal advantage as for studying and influencing present-day architectural development. Devoted to the study as well as the practice of contemporary architecture and possessed of business vision and judgment unusually sound, and interested, too, in the opportunities held forth by the publishing field, what was more fitting than that he follow an inclination so plainly manifest? Thus began a course of action which, as viewed now in retrospect, seems to have been, like many of his undertakings, fully and definitely planned from the start.

In 1911 Mr. MacDonald became assistant editor of *The Architectural Review*, then published in Boston. Two years later he became associated with the late Arthur D. Rogers in editing *The Brickbuilder*, which in 1917 became *The Architectural Forum*, and upon Mr. Rogers' death in 1919 he became Editor of *The Forum* and President of the Rogers & Manson Company. To his efforts are largely due the steady growth and development which have brought *The Architectural Forum* to its present position. A rare insight into the problems which beset the modern architect brought an understanding of the functions of an architectural journal, and an editorial instinct naturally keen was developed by constant study and experience.

Along with the buoyancy and geniality of his disposition there went engaging simplicity and frankness. The unassuming manner which characterized all his relations meant much to his co-workers and assistants. Unfailing kindness and large sympathy marked his contacts of every kind, and it may almost be said that by his death every acquaintance has lost a friend.

It is not given to many to leave so complete a record of duty faithfully and successfully performed, or so wide a circle of friends to whom death brings a deep feeling of personal loss.

THE EDITOR'S FORUM

UPON THIS PAGE ARE PRESENTED A FEW OF THE MANY TRIBUTES TO THE MEMORY OF ALBERT J. MAC DONALD

I am shocked to learn of the death of Albert J. MacDonald, Editor of *THE ARCHITECTURAL FORUM*. Rogers, with his rare spirit, gave your journal a broad foundation; MacDonald shared his vision for the future of the profession. We mourn the loss of a sympathetic lover of architecture, a modest but energetic worker, a genial and always true friend.

D. EVERETT WAID,

President, The American Institute of Architects.

I feel sure that the architectural profession as a whole will feel very keenly the loss of Mr. Mac Donald.

THE FORUM for many years has occupied a unique position in the field of architectural publications, and we of the profession are inclined to regard this as an established condition, overlooking the personality which must necessarily stand behind and be responsible for every important work; but we do realize now how much Mr. Mac Donald's untiring efforts and disinterested service meant, not only to the profession but to Architecture as an Art.

HARVEY WILEY CORBETT,

President, The Architectural League of New York.

My acquaintance with Albert J. Mac Donald was limited to those brief interviews when he called to seek material for *THE FORUM*, or to discuss some feature of that journal. These visits, extending as they did over a number of years, remain as pleasant memories, and they were neither too short nor too infrequent to impress upon me the personal qualities and sincerity of the man.

Mac Donald always wanted the best for *THE FORUM*. He was critical in the choice of his material, eager in the search for something that would be of real educational value and of practical service to the architect. Alive to all the new work that was

being produced, he was always ready to wait, even at the risk of not scoring a "beat," until the kindly hand of time had mellowed both the building and its surroundings. He appreciated beauty. His sympathy for and patience with the architect's point of view made him a welcome visitor.

The architectural profession has lost a true friend, but it will not forget Mac Donald's devoted work to make *THE FORUM* what it is today.

J. LOVELL LITTLE,

President, The Boston Chapter of the American Institute of Architects.

There are not too many good Editors—men who combine ability with personality—in the whole magazine field, and that we should so suddenly and so tragically lose one of the very best of them cannot but be a source of sincere sorrow to architects, writers and all who have come to look to *THE ARCHITECTURAL FORUM* for what Albert J. Mac Donald put into it.

His technique of editing went far beyond routine, and the magazine into which he put so much of himself showed from the first the keen discrimination and consistent ideals of the true editor. Always interested, genial and receptive in his personal contacts, Mr. MacDonald won and held the warm personal regard of those of us who wrote for him, as well as of the host of architects who came to know him after he took over the Editorship of *THE FORUM*.

His loss is a personal thing, not to be measured in words or phrases. The monument to his work is an architectural magazine which commands the interest and recognition of that most exacting of clients, the architect, and the monument to his personality is the real affection with which he will always be remembered by those who knew him.

MATLACK PRICE

THE EDITOR'S FORUM

PROGRESS OF ZONING

APPROXIMATELY 24,000,000 people, living in 261 municipalities throughout the United States, are enjoying the benefits of zoning, according to statistics compiled by the Division of Building and Housing of the Department of Commerce. The greatest zoning center is in the territory in New York State and northern New Jersey, having New York for its hub; other centers are in California, Ohio, Massachusetts, Illinois, and Wisconsin.

Secretary Hoover, in a recent statement, characterized properly drawn zoning ordinances as "reasonable, neighborly agreements as to the use of land." They divide a city into districts in which are limited the use to which land and structures may be put; the height and number of stories of the buildings; and the areas of the lots to be occupied by the buildings. Their professed object is to regulate the use of private real estate for the purpose of promoting health, safety, morals and the general welfare of the entire community.

That the idea has made a strong appeal to the American people is shown by the rapid spread of zoning. On January 1, 1923, there were only 129 zoned cities, towns and villages. The first comprehensive effort to zone was the passage of a zoning ordinance by New York in 1916, although Los Angeles passed a "Use" ordinance in 1909, and Boston regulated the height of buildings in 1904. Cities, towns and boroughs throughout the country generally are showing more than a passing interest in zoning. Where authority is granted, various municipalities are actively engaged in the solution of their zoning problems with enthusiastic zoning commissions and auxiliary committees at work. Even where state legislation does not authorize zoning, various public spirited and progressive organizations are studying local situations so that when zoning can be effected legally, much of the preliminary work will be finished and much valuable time thus saved.

New Jersey leads in the number of zoned municipalities, having 66; New York has 41; California has 33; Illinois, 25; Massachusetts, 24; Ohio, 16; Wisconsin, 13; Indiana, 5; Michigan and Missouri, 4 each; Iowa and Rhode Island, 3 each; Florida, Michigan, Oklahoma, Pennsylvania, Virginia and Washington, 2 each; and Arkansas, Colorado, Connecticut, Georgia, Maryland, Nebraska, North Carolina, North Dakota, South Carolina, Tennessee, Utah and the District of Columbia, 1 each. The complete list of zoned municipalities can be secured from the headquarters of the Division of Building and Housing, Department of Commerce, Washington.

THE 17th PARIS PRIZE

THE Committee on Paris Prize of the Society of Beaux Arts Architects announces the result of the final competition for the 17th Paris Prize, the donor of which is The Paris Prize Committee, Inc. The Jury of Awards included William A. Delano, Raymond M. Hood, Benjamin W. Morris, E. S. Hewitt, E. F. Sanford, Jr., W. M. Kendall, Guy Lowell, H. V. B. Magonigle, D. Everett Waid, Arthur Loomis Harmon, R. H. Pearce, and H. O. Milliken, Chairman.

The awards were:

Placed first, with 1st medal:

Harry K. Bieg,
Edmund S. Campbell, Patron,
Armour Institute of Technology, and Chicago Atelier.

Placed second, with 2nd medal:

Samuel R. Moore,
Columbia University, and Atelier Hiron, New York.

Placed third, with 2nd medal:

Percival Goodman,
Atelier Licht, New York.

Placed fourth, with 2nd medal:

Elmer L. Babitsky,
Atelier Wynkoop-Seymour, New York.

Hors concours:

Andrew F. Euston,
Atelier Hiron, New York.

NECROLOGY

THE death recently of Frederick Walter Ives meant the passing of one identified with engineering and architecture in the different capacities of preceptor, writer, and practitioner. Coming to the Ohio State University in 1909 as an instructor in engineering drawing, he became in 1914 Assistant Professor of Agricultural Engineering in charge of farm structures, and a few years later he was made head of his department.

In addition to the work of his important position as teacher, Mr. Ives carried on in Columbus an independent practice as engineer, specializing in work involving agricultural engineering. He found time, too, for much valuable work as writer or editor, being author of a number of volumes which are being widely used as textbooks in schools. At different times he was a member of the editorial staffs of various publications, while at the time of his death he was a member of THE FORUM's Consultation Committee, his interest being in problems having to do with different phases of agricultural engineering, in which he attained conspicuous success.



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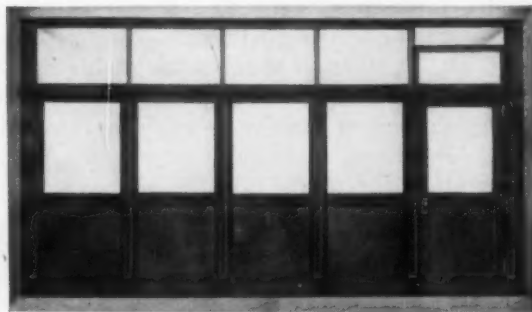
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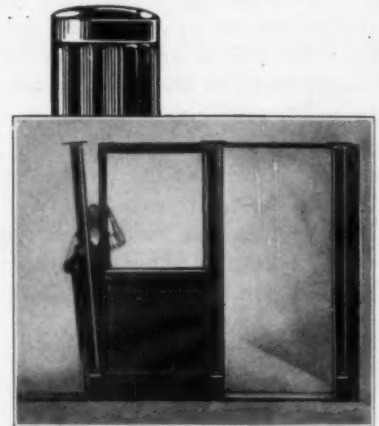
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THE EDITOR'S FORUM

LECTURES AT THE METROPOLITAN

AS part of the exercises attending the opening of the Wing of American Decorative Arts, given by Mr. and Mrs. Robert W. de Forest, there have been announced two courses of lectures. The first series of eight lectures, to be given on Mondays, from November 17 to January 4 in the Lecture Hall, will seek to present a general view of the various phases of art which are exemplified in the collections of the new wing. The second series of seven talks, to be given on the Tuesdays following, November 18 to December 30, in the galleries of the wing itself, will take up in a less formal manner the objects exhibited, under the same general headings as those adopted for the first course.

Attention is called to two lectures to be given by Herbert Cescinsky on March 15 and 22, 1925, at four o'clock, upon *The Influence of Architecture on English Furniture* and *The Minor Craftsmen in English Furniture*.

EXHIBITION IN MONTREAL

UNDER the auspices of the Province of Quebec Architects' Association there will be held at the galleries of the Art Association of Montreal, from November 12 to 24, an exhibition of old French architecture in Quebec, consisting of photographs, measured drawings and sketches of buildings which have been demolished as well as of those still existing. The School of Architecture of McGill University will contribute an exhibit of surveys of old buildings made by its students, and holders of the Province of Quebec Studentships for the past 15 years will have their work on view, while the David Ross McCord National Museum, which has a rich and varied collection of drawings of old French buildings, has signified its willingness to contribute.

It is the hope of the promoters of this exhibition to raise sufficient funds to publish the first volume of a work of surveys and photographs of old French architecture in Canada, the beauty of which attracted attention at the British Empire Exhibition.

HOUSE BEAUTIFUL COVER COMPETITION

THE success of the cover competitions held the last two years has led the *House Beautiful* to repeat this event and again to offer two prizes, one of \$500 and one of \$250, to successful contestants. A number of honorable mentions will also be given. The competition will be closed February 7, 1925. Full particulars regarding the competition may be had on application from the Competition Committee, *The House Beautiful*, 8 Arlington Street, Boston.

ELECTRIC POWER CLUB HANDBOOK

THE Electric Power Club, Kirby Building, Cleveland, has recently issued the 14th edition of its handbook, which covers substantially all the standardization which has been effected in America of the manufacturing of electric motors, motor pulleys, generators, transformers, electric tools, mining and industrial locomotives, control equipment, power switchboards, and switching equipment. One detail of the work which increases its helpfulness is the inclusion of definitions, data regarding symbols and considerable general engineering information.

DETROIT AND CHICAGO EXHIBITIONS

THE Thumb Tack Club, the exhibitions of which are always of interest, will hold its Fourth Annual Architectural Exhibition at the Detroit Museum of Arts, November 17 to 30 inclusive. Plans for the 1925 exhibit of the Chicago Architectural Exhibition League are now well under way, the exhibit having been announced for opening in February in the East Wing of the Art Institute; the items will be sent later to the National Exhibition to be held at the Grand Central Palace in New York.

Details regarding the Detroit exhibition may be had of Clair W. Ditchy, 324 Kerchev Building; information concerning the Chicago exhibition may be had of Pierre Blouke, 721 No. Michigan Avenue.

RESULTS OF A COMPETITION

JUDGES in the contest conducted by *Country Life* for the best design for a country home for a man of moderate means have recently announced these awards:

First Prize, Alfred Cookman Cass, Philadelphia.

First Honorable Mention, Henry A. Cook, New York.

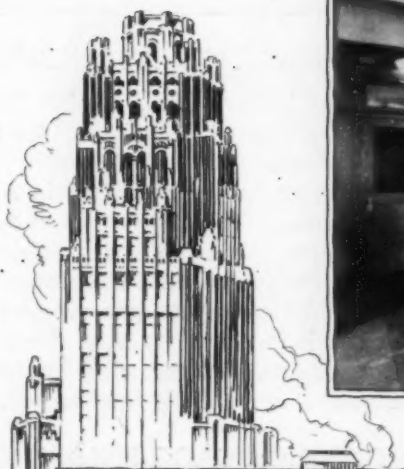
Second Honorable Mention, John Floyd Yewell, New York.

Third Honorable Mention, H. Ross Wiggs, New York.

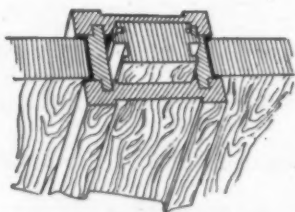
In addition to these, for general excellence of design and plan, 12 more were favorably mentioned. These were:

Leslie W. Devereux, Utica; C. W. Lemmon and F. H. Stanton, Los Angeles; I. Pendlebury, Owen L. Gowman, Charles Kenneth Clinton and William Rankin, Polhemus & Coffin, Francis Keally, William Adams Delano, New York; Richard I. Brumbaugh, Denison, Texas; Alfred F. Schimek, Chicago; D. M. Allison and R. O. Dorwin, Cleveland; Michael J. Hoffman, Jr., Buffalo.

The judges of the competition were John Russell Pope, Alexander B. Trowbridge and Reginald T. Townsend, the latter Editor of *Country Life*.



When this tenant moves, or wants different space, a totally new layout can be made with this same partition.



This is a section of Telesco patented telescoping post. It is screwed to the floor and holds the sections firmly in place. The telescoping member reaches to any ceiling height.



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No matter what layout you want, flexible Telesco will make it. It can be added to, or shortened, both for length and for height, without cutting the wood. Not a nail is used in its construction.

Screws hold it solidly in place.

Any house carpenter can move it with his principal tool, a screwdriver.

2. *Interchangeable Units*

Partition taken from one floor to another, fits together exactly.

All units are interchangeable, and can be carried in stock or ordered from the factory at will.

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No office furniture you buy will have a more beautiful finish than Telesco Partition.

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Telesco will give a lifetime of service.

It is made in the best equipped wood working plant in the East, by partition specialists.

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THE EDITOR'S FORUM

CHANGING EDUCATIONAL TENDENCIES

IN a recent report to Dr. Nicholas Murray Butler, President of Columbia University, the Director of the School of Architecture of Columbia, William A. Boring, records some of his impressions of the International Congress on Architectural Education, which recently concluded its sessions in London.

"American architects," Prof. Boring declares, "are both artists and philosophers, comparable in their cultural associations to those of Greece and Rome." Planning he calls the basis of architecture, saying that "training demands knowledge of construction."

"The keynote of nearly all the discussions of the Congress impressed one as insistence on expression of modern ideas of physical needs of society, and of modern methods of construction," says the report of Prof. Boring, who is Treasurer of the American Academy in Rome. "Insistence was recorded on expressing modernity. The need of beauty was not stressed, nor was the cultivation of taste made an issue. This is, no doubt, a healthy sign. The feeling that we are leaning too much on the use of good old forms which have been over-worked augurs something vital, but this idea alone cannot lead us to success in architectural design.

"Knowledge of structural materials and their uses, excellent craftsmanship, even good detail, are not the broad basis of good design. To place these in the forefront of an educational scheme seems narrowing. The disposing of masses after analysis of the problem is more important. Planning in its broadest sense is the basis of architecture.

"Architecture as a profession should rank in the public mind as on a par at least with law and medicine. We cannot maintain it so by teaching the craft alone. We must turn out scholars who are masters of craft also. In America our architects of distinction move in the highest intellectual circles, as they did in Greek times. They are men of culture, of science, of good taste, and have a knowledge of building processes as well as of good design.

"Much has been said about commencing early to learn architecture, and no doubt early familiarity with good buildings is an advantage. Our experience, however, shows that college bred men who come rather late to the study of architecture are the strongest men in our school. Learning to draw early is almost essential, and facility in this method of expression is a great advantage. Some have it naturally, others must acquire it, all must master it. But the art of architecture is greater than its expression on paper. Only a limited number of aspirants reach the plane of real architects. Schools should teach such subjects and in such a way as to

bring out and develop the student's natural gifts.

"We must recognize that a person of great talent will succeed either in or out of a school, but he will have a better basis or foundation for his work if he has had good school training. A school should give him those things as basic ideas which he can learn in practice only by going through and rising above the maze of details. Four years are not enough time for a high school graduate to reach the proficiency represented by our degree. If a curriculum includes general educational subjects, it should be longer than four years because the professional instruction alone requires at least that much time. The average student who has not advanced beyond high school grade is not sufficiently developed to properly approach the major subjects taught in a professional school. He can very well be taught by allotting six years from high school to diploma, on the plan of a combined course which begins by mixing the elementary subjects in his professional studies with his general college curriculum."

JOSEPH HOWLAND HUNT

AS part of the heavy loss which the Profession has sustained during 1924 came the death on October 11, of Joseph Howland Hunt. As a son of Richard Morris Hunt he fell heir to distinguished architectural traditions, and after preliminary study at St. Mark's and Harvard he entered the Columbia School of Architecture and studied for some years at the Ecole des Beaux Arts. After considerable travel in Europe, chiefly in France and Spain, he joined his brother, Richard Howland Hunt, in continuing the practice established by their father, and in 1911 the brothers formed the firm of Hunt & Hunt.

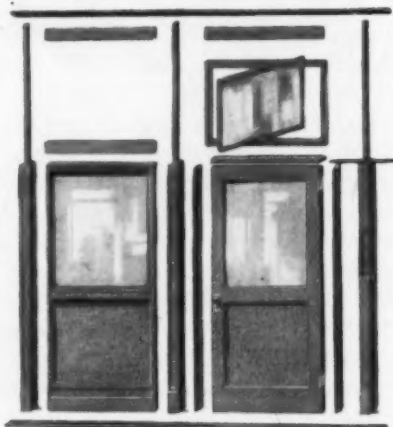
Mr. Hunt was prominent in spheres other than that of architecture. He was a Director of the Municipal Art Society from 1916 to 1924, and President from 1919 to 1923; First Vice-president of the National Sculpture Society from May, 1921 until May, 1923; Secretary of the Fine Arts Federation from 1904, until 1916; Treasurer of the Architectural League of New York from May, 1912 until May, 1914; a member of the American Institute of Architects, Society of Beaux Arts Architects, Municipal Art Society, Architectural League of New York, National Sculpture Society; and Metropolitan Museum of Art.

Perhaps none of the personal characteristics which accounted largely for Mr. Hunt's wide circle of friends will be remembered with such pleasure as will his winning geniality and the bright optimism with which he regarded life, and his unfailing consideration toward those with whom he came in contact.



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SERVICE SECTION of THE ARCHITECTURAL FORUM

Information on economic aspects of construction and direct service for architects on subjects allied to building, through members of THE FORUM Consultation Committee

The Building Situation

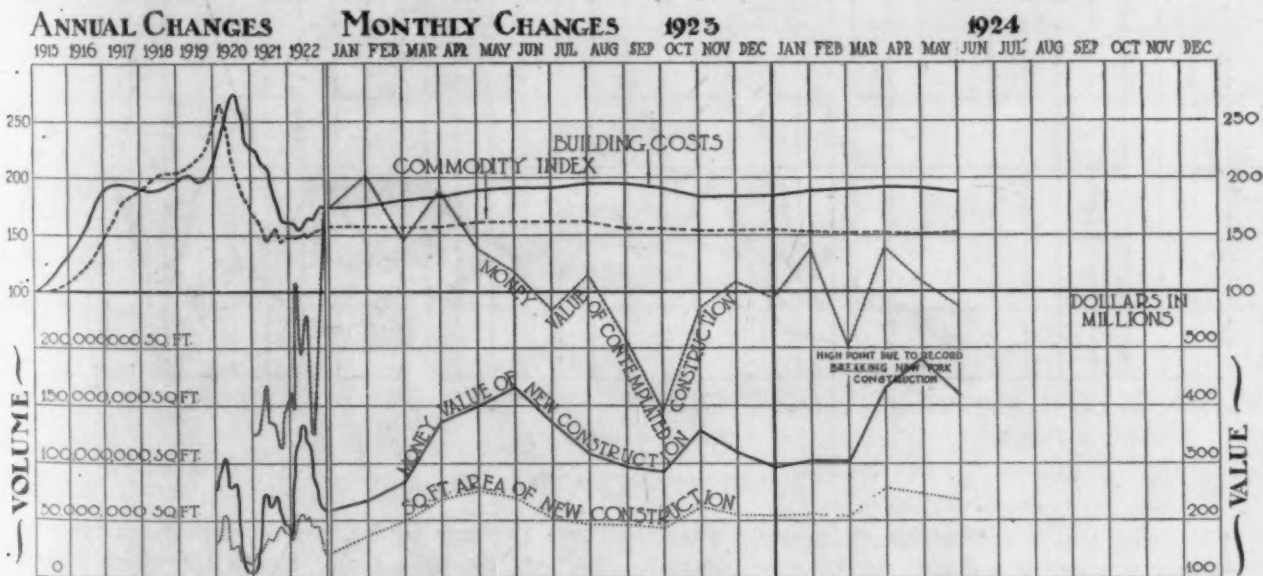
DURING the first five months of this year the total value of new building construction as indicated by contracts let throughout the country has reached the unprecedented figure of over two billion dollars. The record-breaking phases of this activity have been largely confined to the Eastern district, which includes metropolitan New York, and may be attributed primarily to a vast volume of speculative building. The figures for May which, according to the F. W. Dodge Company, are 13 per cent below those of May, 1923, indicate the swelling up of this unusual activity, but it is interesting to note that substantial increases over last month are shown in New England, the Northwest, and the Southeastern states.

There are in fact several definite symptoms of a radical change in the building situation which would seem to predict a trend away from speculative building and toward institutional, investment and similar types. It is quite probable that there will be a slowing up in the residential building field, because it is evident that in many of the more congested areas the housing demand is fairly well satis-

fied. A number of architects report a reduction of interest on the part of speculating builders and an increase of interest on the part of clients interested in the construction of institutional buildings, large private residences, office buildings and other structures for direct utility purposes. It may be said, in other words, that we are again reaching the end of the highly speculative cycle and approaching the more conservative market which usually follows.

The figures for May substantiate these statements because they indicate a sharp reduction in residential and industrial activity and a definite increase of interest in the letting of contracts for commercial, educational, religious and hospital buildings. It is quite probable that following a natural reduction of activity during the summer months there will be a sharp increase in the volume of new buildings indicated by contracts let in the fall.

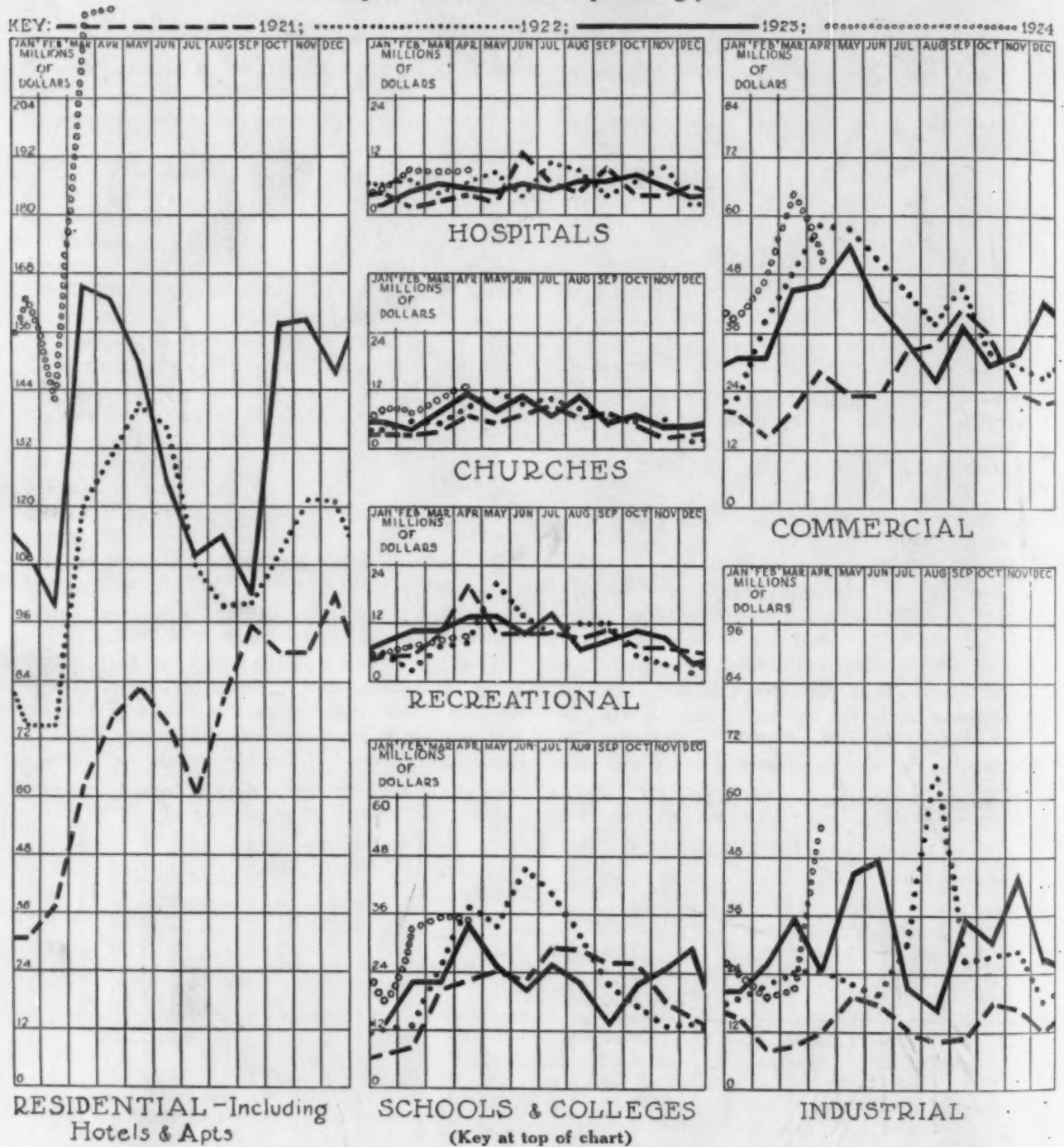
Mortgage money is still plentiful, and there seems to be no decrease of confidence or interest in this class of investment, except that the large loaning interests are in many sections deliberately discouraging certain forms of frankly speculative building.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs*. This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index*. Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction*. Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Co., and *Engineering News-Record*. (4) *Money Value of New Construction*. Total valuation of all contracts actually let. The dollar scale is at the right of the chart in millions. (5) *Square Foot Area of New Construction*. The measured volume of new buildings. The square foot measure is at the left of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined first, by the trend of building costs, and second, by the quality of construction.

Monthly Analysis of the Trend of Building Activity

A study of the value of contracts let each month in seven important types of buildings—with graphic comparisons for the three preceding years



APRIL 1924 CONTRACTS

IN order that a comparison of monthly activity may be made at a glance, the value of contracts let is presented in the above graphic charts. This information is based on data obtained through the United States Chamber of Commerce and the F. W. Dodge Corporation. The activity of each year is shown by a special line according to the key indicated at the top of the page. Thus, on each chart the activity in the form of Money Value of Con-

tracts Let may be followed through from January, 1921, to the most recent month for which figures were available when this page was printed. Not only is a rapid comparison provided of the total activity each year, but the relative activity for each month can be estimated by referring to the index figures representing millions of dollars as shown at the left of each chart. Reports cover about three-quarters of the total building in the United States.

Table Showing Average Prices Paid by Contractors for Building Materials at Local Distributing Points as of May 1, 1924. Prepared by Division of Building and Housing of the Bureau of Standards from Prices Secured through the Bureau of Census

| Commodities | Size or Condition | Unit |
|------------------------------|---------------------------|---------------|
| Common Brick..... | Excl. of containers. | 1,000 Bbl. |
| Portland Cement..... | Dimension 2x4-16' | SISIE M |
| Yellow Pine No. 1..... | Dimension 2x4-16' | SISIE M |
| Douglas Fir No. 1..... | Dimension 2x4-16' | SISIE M |
| No. Carolina Pine No. 1..... | Dimension 2x4-16' | SISIE M |
| Common Boards No. 1..... | 1x6 | M |
| Y.P. Flooring Edge Grain "C" | 1x4-10'-16' | M |
| Douglas Fir V. G. No. 2..... | 1x4-10'-16' | M |
| Red Cedar Shingles..... | Extra clear 16" 5 to 2 | 100 sq. ft. |
| Cypress Shingles..... | Crushed slate surfaced | 100 sq. ft. |
| Composition Shingles..... | " " | 1,000 sq. ft. |
| Gypsum Plaster Board..... | Hyd. | Ton |
| Lime..... | Building | Ton |
| Building Sand..... | 3" | Cu. yd. |
| Crushed Stone..... | 3" | Ton |
| Wire Nails..... | Single A 10"x12" | Keg |
| Hollow Tile..... | 8"x12"x12" | 50 sq. ft. |
| Cast Iron Pipe..... | 4" E.H. 13 lbs. per ft. | Each |
| Steel Pipe..... | 1" galv. | Ton |
| Reinforcement Bars..... | 1" square | 100 lbs. |
| Structural Steel..... | Fab. 6" | 100 lbs. |
| White Lead..... | Dry | 100 lbs. |
| Zinc Oxide..... | Am. process lead free | 100 lbs. |
| Gypsum Plaster..... | Neat | Ton |
| Linseed Oil..... | Raw in bbls. | Gal. |
| Roofing Slate..... | No. 1 ribbon | 100 sq. ft. |
| Tar Paper, Roofing..... | 2-ply 75 lbs. per roll of | 100 sq. ft. |
| Rosin Sized Sheathing..... | 3-ply 30 lbs. per roll of | 500 sq. ft. |

THE FORUM CONSULTATION COMMITTEE

A group of nationally known experts on various technical subjects allied to building, providing a direct service to architects

THE editors of THE ARCHITECTURAL FORUM have been fortunate in obtaining the co-operation of the following recognized experts who constitute THE FORUM Consultation Committee. This Committee provides a service of the greatest value to subscribers in addition to the usual editorial service, and architects who seek information on specific questions in these various fields are invited to present inquiries.

The basis on which this Committee has been organized is:

- (a) That each committee member shall be a representative leader in his line;
- (b) That no committee member has affiliations with any manufacturer;
- (c) That no committee member will be called upon for detailed service excepting by special arrangement;
- (d) That a special editorial article on a subject represented under each of the headings below shall be prepared during the year by the committee member.

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DANIEL P. RITCHEY

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Vice-president of the Society for Electrical Development

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Mr. Cushman's firm has participated largely in the promotion and operation of many large New York buildings. His specialty is the management of office buildings.

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NILS T. SELLMAN

Service Engineer, American Gas Association

A specialist in problems pertaining to gas service and its use in all classes of buildings and industries.

THE FORUM DIGEST

A SURVEY OF IMPORTANT CURRENT ARTICLES ON BUILDING ECONOMICS AND BUSINESS CONDITIONS AFFECTING CONSTRUCTION

The Editors of this Department select from a wide range of publications matter of definite interest to Architects which would otherwise be available only through laborious effort

AMERICAN CONSTRUCTION COUNCIL

A Statement Issued Through Its President,

Franklin D. Roosevelt

ONE year ago a general condition, characterized by nearly everyone's trying to build at once, existed throughout most of the country. The resulting congestion created a serious situation which caused the American Construction Council, in coöperation with other agencies, to sound a note of warning and suggest that speculative and unnecessary building be suspended until the supply of labor and materials could catch up. This view of the situation came to prevail throughout the country, and the volume of construction and the price levels did not rise to the breaking point.

As one of the results of this steady-ing of the industry, the Council was able, last fall and early winter, to urge all those desirous of building at that time to undertake such work so far as possible at an early date in order to benefit by the usual slackening of demand for materials and labor during the winter months. It was hoped in this way to avoid a possible building crisis in the spring of the present year. The large volume of construction contracted for and started during the fall and winter months shows that the public responded very favorably.

In reviewing the situation at the present time, the Council believes that there is no need for a warning such as existed last year. While general business has dropped off somewhat during the past three months, construction is one of the few great industries that has held up. Though there is a large volume of construction under way and projected, the great amount of winter work already done and present activities show greater stabilization than has often existed at this season of the year. This does not point to danger for the country as a whole, although in certain localities this may not hold true, particularly in the vicinity of New York.

It is the Council's recommendation at this time that investors and all others interested in construction watch developments closely, particularly for the next few months. If an artificial boom presents itself, great

care must be exercised in regard to speculative and other unnecessary construction until the danger is passed. Winter building and especially the postponement of maintenance and repair work to the slack season, as repeatedly urged by the Council, will do much to help a situation of this kind and at the same time lengthen the working period, thus extending the active season without overlapping or congestion. If on the other hand there should be an early slackening or recession of work, proper measures should be taken to bring out those kinds of construction which otherwise should be deferred until the period of greatest activity is normally passed.

The future course of building construction costs is somewhat problematical. At present they are at a high level in spite of the mistaken attempt to decrease such costs by poor construction.

One very serious situation confronting the country requires special attention. A large percentage of present-day building construction throughout the country is distinctly inferior in quality and unsound in financing. Thousands of structures now under way or recently erected, especially in housing, are subject to such rapid deterioration that within ten years' time, sometimes less, they will be practically valueless. This rapid depreciation coupled with unsound methods of promotion must entail enormous loss on the principal investment, besides entailing serious expense and heavy additional burdens for repairs and maintenance after a few years. A still further burden is added by the higher rates of insurance due to the use of inferior materials and poor construction. All these make for higher rents.

This situation results from the activities of irresponsible groups, found in every element of the industry. Faulty engineering, unreliable architects, inexperienced and incompetent contractors, inferior grades of materials, poor mechanics, inadequate and poor inspection, and other bad factors too frequently enter into building work. These have serious effects, but no more serious than unsound financing. Mortgage bonds are issued and sold on speculative buildings. Many such issues are based on improper security and fictitious state-

ments of earnings at abnormal interest rates. They find buyers because of the general ignorance existing in many quarters as to the requirements for good real estate securities. Such purchasers are usually those who can least afford to be victimized. Every element of the industry must bear its proportionate share of the blame for the vicious practices not infrequently found in building projects today, and for permitting within its jurisdiction practices that do not measure up to proper standards.

To further the interests of the business of building and a general adoption of the principles of better building the Council has appointed a special and fully representative committee of men vitally interested in the desirable ends to be gained. This committee will make a survey of conditions and recommend correctives where deemed necessary.

The Council's program for the training of apprentices and the development of improved craftsmanship in the building trades is calculated to benefit greatly this situation. Quality of workmanship and sufficient numbers of workers are very vital to high-grade construction. Training apprentices is a national question and cannot be solved merely by treatment in isolated spots without regard to the other sections of the country and national needs as such. The American Construction Council, as the national body representative of all elements in the construction industry and the public and coöperating with the various localities and branches of the industry, thus has in its apprenticeship work a most effective means for furthering the principle of better building in addition to other desirable ends to be gained through apprentice training.

The foregoing measures combined with the Council's help in reducing the seasonal variations in building operations with their bad effects on quality of construction, particularly during the rush periods of the year, and its assistance in the promotion of organizations in the different localities of the country by bringing together the various elements of the industry in these sections as a part of its national movement to promote responsibility and intelligent coöperation in all of their aspects, furnish the basis for securing very practical results to industry generally and to

the public which is chiefly concerned.

This statement was somewhat amplified a little later by Mr. Roosevelt who is quoted as saying:

"The danger of inflation, such as confronted us a year ago at this time is not to be feared at present. There is no denying the fact that business as a whole has received a setback, although the construction business has not suffered so far. It is unthinkable, however, that business generally can slump off for any protracted period without the construction industry's feeling the effect. The next three months should reveal just what is before us. Either there will be a turn for the better in business generally or else things will go on much along the present line. This will give the construction industry an opportunity to guide itself properly and set its house in order."

In the course of a discussion it was suggested by one of the men present that with the tendency as pointed out by Mr. Roosevelt, it would be the height of folly to keep on paying higher and higher wages to building labor. This led E. J. Russell, a St. Louis architect, to review a pact made in that city between the building industry and building labor last year, providing for the highest wages in the country, with labor agreeing not to unsettle conditions by asking for still higher wages. The material men, he said, had, however, advanced prices.

BUILDING INDUSTRY IN SOUND CONDITION, AUTHORITIES DECLARE

Despite Tendency Toward Over-Expansion in New York, Continued Large Volume for Nation Is Predicted

EXCEPT in New York the present indications do not point to any likelihood of over-expansion in the building industry. Thus is the situation summed up by the *Guaranty Survey*, published by the Guaranty Trust Company of New York, in which it is shown that building conditions are generally sound. "In spite of the high level of building activity which has been maintained for more than two years," says the *Survey*, "it is evident that an appreciable part of the shortage resulting from the relative inaction of the war period still remains; a dearth of structures for the country as a whole is still apparent."

In comparing the 1923 building figures with those of 1922 the *Survey* points out that "it is doubtful, in view of the higher costs represented and the amount of construction known to have been postponed or abandoned, whether the actual work undertaken was equal in volume to that of the preceding year (1922)."

Briefly, the *Guaranty Survey* brings out these points which are so fundamental as to be worthy of the serious thought of not only the building industry, but also the financial and business world:

(1) The 15 per cent increase reported in 36 states during the first quarter is more than accounted for by the figures for one city—New York, where speculative building on a large scale is causing real apprehension that a housing surplus may result—residential building being nearly three-quarters of the activity in prospect in New York.

(2) The remainder of the nation shows about 10 per cent decrease in physical volume, and present national conditions give promise of a well sustained rate of activity.

(3) Because of higher building costs it is doubtful if the spring building season will show an increase in physical volume enough larger to cover the usual seasonal increase.

(4) Rent levels affect the "housing shortage" through their influence on the "incentive to rent" and the "incentive to build."

(5) A decline in rents would decrease the incentive to build but would increase the incentive to rent—the one counteracting the other.

(6) The decline in building activity will probably be gradual, and a large volume of construction may be anticipated for some time to come.

In reviewing the *Guaranty Survey*, G. L. Miller, president of G. L. Miller & Company, said that "this *Survey* appears to present the most careful, keen and level-headed analysis of the building industry which has come to my attention. It points out that the housing shortage is not stable; it fluctuates according to rent levels, being defined as 'the excess of demand for housing space, at existing rent levels, over the amount of space available.' Nor can the housing shortage be properly expressed in terms of dollars, for the dollar itself fluctuates in purchasing power, and the costs of construction vary from time to time. It would seem to be much more accurate to use figures representing area in square feet of floor space or, in other words, physical volume."

"The *Guaranty Survey* makes a sharp distinction between conditions in New York and in the rest of the nation. This is refreshing, since it seems to be a most common mistake to base national conclusions on local New York conditions. Contrary to conditions prevailing in New York, building retrenchment is well under way in the south. Curtailment of building operations in the southern states is a national and healthy development after five years of activity, during which new construction records have been successively piled up. Unless the last six months of 1924 bring forth unexpectedly large totals of building, the south will probably

show a 10 to 20 per cent decrease this year, as compared with 1923.

"Retrenchment of building operations in the south, and for that matter in several sections of the United States, means that real estate values and rentals are being placed upon an even more stable basis than in the past. Such retrenchment is a safeguard against possible over-building and does not mean that the need for new buildings has been satisfied. It merely means that at the present levels of building costs, and rentals, property owners and financing institutions have deemed it prudent to guard against any possible decline in demand. As the *Guaranty Survey* points out, should rents decline there would immediately be a fresh increase in demand for housing space, which would stabilize the building situation and operate to check a further decline. Thus we see that the building situation is in a continual state of flux and creates within itself the cures for the ills it sets up. Upon this principle we can erect a structure of confidence in building as the second largest industry in the country, and as one of the principal stabilizers and stimulators of business and trade prosperity."

"As one analyst recently pointed out, this means that 'unless stopped by some great national misfortune, the building industry will continue to maintain and promote American prosperity . . . as it has helped maintain and promote American prosperity in 1923 and 1922. A more encouraging sign of the times could hardly be imagined.'"

Further comment on the *Guaranty Survey* was made by Thomas S. Holden, statistician of the F. W. Dodge Corporation, who says, "Our own analysis of the situation is in substantial agreement with the *Survey*. With the rather glaring exception of New York, the speculative element does not appear to be dominant in building operations generally. After a winter of unusually large activity and the usual seasonal increase this spring, there is now a gradual reaction in progress, which comes at just about the right time to check the recent boom from going beyond reasonable bounds. We note with particular interest the remarks in the article concerning the reaction of rent levels and construction costs on building demand. Should there be a sufficient slowing up of building activity to bring about decreases in either of these important factors, it is very likely that a new demand, now dormant, would assert itself. For this reason, building volume, aside from temporary fluctuations, ought to continue at a very good rate for a long time to come."

The New York Building Congress has recently issued an announcement that, unless there is a voluntary curtailment of building plans, it will

undertake an active campaign to induce moderation. This applies, of course, only to New York and is indicative of the close watch which is being kept on the situation here. It is not improbable that the great amount of expert analysis and sensible forecasting which is being done by the Building Congress and other organizations of similar nature will tend to supply the psychological check which may save the local situation from serious demoralization.

COST OF BUILDING DOUBLES IN LAST 10 YEARS; LABOR AND MATERIALS SHARE EQUALLY IN RISE

BUILDING costs in the United States, in the midst of what economists have agreed in the country's greatest construction boom, have doubled in the last ten years, according to an announcement issued by the National Industrial Conference Board. In its announcement the board summarized the results of a study into the national building situation, which shows that costs of labor and of materials stand at exactly the same increased levels for the first time since 1920. While in New York the building crafts receive high wages, last month they were the highest in the country in only 10 out of 25 trades. Graphic charts reveal the nation-wide character of rising costs, not alone in wages, but in all materials entering into building. Other cities reporting uniformly high wages are Chicago, Cleveland, Pittsburgh, St. Louis, and Houston, Texas.

The investigation covered the leading American cities, and took in all the crafts and the leading elements in building material. Wage figures were based on government and other reports annually in May from 1914 to 1920, and monthly since August of that year. Among the separate trades, plasterers and bricklayers receive the bulkiest pay envelopes in practically all cities. Bricklayers get

\$1.25 an hour in 50 cities, and plasterers in 44 cities, while in St. Louis the rate is \$1.75 an hour. Lathers and masons get \$1.50 an hour in Houston, Texas, the same rate being received by roofers and hoisting engineers in New York. Masons get \$1.25 an hour or more in 28 cities, lathers in 12 cities, hoisting engineers in seven cities and roofers in four. Gasfitters and steamfitters in Houston, plumbers in Houston and Pittsburgh, ornamental iron workers in Cleveland, marble setters in Philadelphia and tile setters in Shreveport, La., all get \$1.37½ an hour. In New York the trades best paid next to those cited are carpenters, cement finishers, painters, pipe coverers, sheet metal workers, and structural iron workers. These get \$1.31¼ an hour. Although their wages are less, steamfitters' helpers and laborers get the highest wages in the country in New York. The hodcarrier, once figuring prominently as the butt of cartoon and caricature, now counts himself among the aristocracy of labor, according to the board's survey, for he earns up to \$1.25 an hour, and the average earned by all hodcarriers is more than 90 cents an hour, in the cities surveyed. The same sustained high levels are also being enjoyed by plumbers, electricians, carpenters and sheet metal workers.

Prices of building materials until recently more than kept pace with the rise in wages, the announcement reveals. It shows that from 1915 to 1920 the prices of materials increased more than twice as much as wages. In 1921, however, they fell to approximately the same levels as wages, and during the past year the present 100 per cent increase over 1914 in both was established. Cast iron pipe is the most expensive commodity in construction, as compared with 1914 wholesale costs, showing an increase of 306 per cent. Other materials which have more than doubled in cost in the past ten years are Douglas fir, lime, white pine, white lead and turpentine. Sheet copper and copper wire show the least advances over

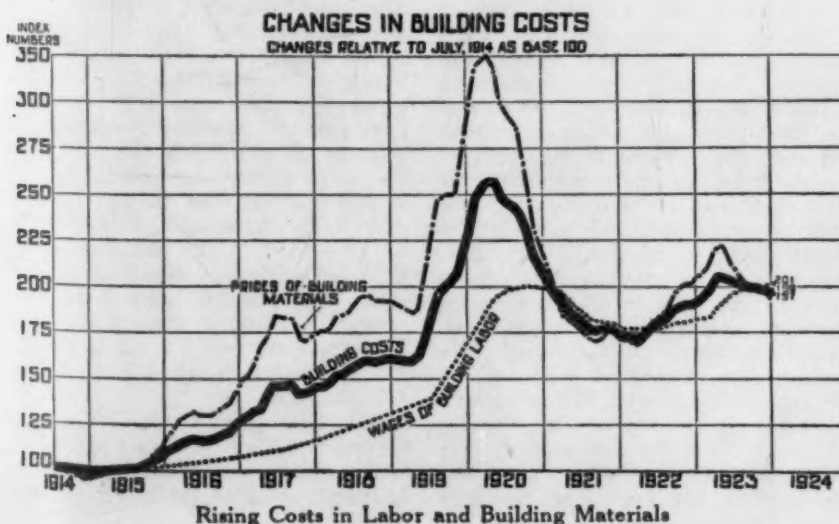
1914 of only 4 and 5 per cent. Pine flooring and structural steel show great reductions over the peak period.

The general trend of building costs, taken as a whole, shows a tendency downward for materials, and a rising tendency in wages. There was nothing adduced in the survey to indicate appreciable reductions in building costs in the near future, conditions as a whole being considered.

REPORT ON PLUMBING

THESE pages have presented many notes on the progress of the movement toward simplification and standardization in building practice. The Department of Commerce Report on Recommended Minimum Requirements for Plumbing in Dwellings and Similar Buildings results from a widespread feeling that present state and municipal code requirements are in some respects unnecessarily restrictive and that conservation of labor and materials could be effected by scientific investigation of the burdens on such systems, and their performance under conditions of use. It is well known that the codes of different localities vary widely and that practices forbidden in some places are successfully employed elsewhere. The benefits of uniform requirements in permitting simplification of plumbing supplies are also generally recognized. The development of plumbing code requirements and practice in installation of plumbing systems have been almost entirely in the hands of master plumbers and journeymen. Architects and builders have been too likely to disregard the importance of this feature of building construction and it follows that no careful investigation has ever been made of the laws governing operation of plumbing systems. The report contains a recommended code and, in addition, a complete report of the experiments at the Bureau of Standards, showing how the committee arrived at its recommendations.

The results indicate that present customary assumptions in the design of plumbing are considerably on the side of safety and point the way to substantial economies in future work of this sort. The committee recommends that 3-inch soil stacks be permitted in systems for dwellings; that the running or house trap now required in many cities be omitted, and that a distance of not to exceed 5 feet be permitted between traps and ventilation pipes. As a result of tests with complete household systems it was found possible to eliminate much of the expensive vent piping now considered necessary. Economies possible through complete adoption of the committee's recommendations are estimated at from \$50 to \$100 for a 2-story dwelling with the usual number of fixtures, depending on the nature of requirements now obtaining in a given locality anywhere.



Consideration was given to the much discussed subject of plumbing code administration. The report states that while the relation of defective plumbing to disease is much less direct than formerly believed, the subject in all its branches is not yet fully explored, and the possibility of direct access of vermin from the interiors of plumbing systems to those of buildings is sufficiently objectionable to justify public regulation of plumbing work. The committee recommends a competent official plumbing inspector under jurisdiction of public safety authorities, to examine and approve plans and specifications, test and approve plumbing systems and take such other measures as will make his control of plumbing work effective. The advisability is suggested of substituting certificates of competency for the present licensing system and of permitting owners to install plumbing personally, provided this is done in accordance with the code and subject to official permit and inspection.

In addition to the recommended plumbing code an extensive report by the Bureau of Standards giving the procedure and results of experiments with plumbing systems carried on for over two years at that institution is contained which presents a considerable amount of data and discussion interpreting the results of experimental work and showing how the committee arrives at its recommendations for code revision. There are chapters on the lack of uniformity and agreement in present plumbing codes and on the desirability of simplification of plumbing supplies and fixtures. The report discusses the relation of plumbing to health and the considerations involved in licensing of plumbers, and plumbing inspection as a means of code enforcement. The appendices describe recent developments in theory of corrosion of metals, and investigations of the diffusion of gases in unventilated pipes.

The report contains 260 pages of text and 100 illustrations, mostly given in connection with the report of experiments at the Bureau of Standards. It may be obtained from the Superintendent of Documents, Washington, for 35 cents per copy. Remittances should be by currency or money order.

THE LOCATION OF LIGHT SOURCES

WHEN planning a lighting system, according to the *Electrical Record*, the importance of the proper location of outlets is frequently not given sufficient consideration. Too often the matter of shaving the cost is uppermost in mind, which sooner or later will result in an inadequate and generally unsatisfactory installation. It must be remembered that once the outlets are installed, the

lighting units, sizes of lamps, etc., may be changed without great expense. However, if the room is to be used for any purpose which demands a change in the outlets merely because they are not sufficient in number or properly placed, considerable expense and annoyance may be experienced. Proper location of the outlets throughout a building when the lighting system is first installed will therefore economically provide for future needs, however remote the need may seem at the time when the lighting system is planned.

"The interiors of most buildings are divided into bays by columns or ceiling beams. Symmetrical location of the lighting units in each bay is a very convenient and desirable method of placing the outlets. Starting with the proper location of the units in one bay, the plan can be extended through the entire building. Should there be no structural divisions by either columns or beams, a plan can be laid out to scale and arbitrary divisions established.

"Outlets should not be spaced at a greater distance than $1\frac{1}{2}$ times the mounting height from the floor. Thus if the unit is mounted 10 feet from the floor, the maximum distance between the units will be 15 feet. Spacing at a greater distance will result in spotty illumination. Furthermore, the angular direction of light will be such that annoying and even dangerous shadows may result. While a 15-foot spacing is permitted at a 10-foot mounting height, it should be remembered that better illumination will result from closer spacing. A rule-of-thumb method of spacing and mounting distances which will suit a large majority of cases is this: Mount the units 10 feet from the floor, space them 10 feet apart. Equip the units with 200-watt lamps and a level of illumination of approximately 10-foot candles will result. Where the proportions of the bays or rooms are such that 10-foot mounting height and 10-foot spacing distance will not be exactly suitable, a slight variation in either dimension will not materially affect the resulting illumination.

"Particular problems occasionally arise in which the commonly used method of spacing and mounting height will not be the best practice. In a room which is to be used for rough work, where a high level of illumination is not necessary, it might not be economical to provide the usual number of units per bay. Nevertheless, it may be desirable to arrange the units so that in case the room is to be used later for work requiring closer visual application and consequently more light, it can be secured without too great an expense.

"In a room having square bays measuring 20 feet on a side, the ordinary layman may deem one unit

per bay sufficient. That would mean a spacing distance of 20 feet between units which would be permissible if the ceiling height were such that the units could be mounted at least 14 feet above the floor. The spacing distance would not exceed $1\frac{1}{2}$ times the mounting height. However, it is always recommended that more than one unit per bay be installed in areas of this size so that light will reach the work from a sufficient number of directions to insure freedom from bad shadows, which might exist otherwise.

Locating Outlets

"In one particular instance the ceiling height is 13 feet which is too low for a mounting height which will permit 20-foot spacing. The rule-of-thumb method will readily apply in this case, 10-foot mounting height and 10-foot spacing distance which will provide four units in each bay. If, however, four units per bay are not deemed necessary, the placing of two units per bay will provide fairly satisfactory illumination. This arrangement will allow for future installation of two additional units per bay to provide more illumination for more exacting work. Should it be found necessary to divide up the room into smaller rooms, each individual room will be fairly well lighted without change in the lighting system. If there are benches along the outside walls extra units may be installed between those units comprising the outside rows to provide a higher level of illumination on these benches.

"In a building where the bays are rectangular instead of square, a different arrangement of units will be required. In another instance the bays are 16 x 20 and the ceiling height is 11½ feet. Here again one unit per bay will not provide uniform illumination on account of the low mounting height occasioned by the height of the ceiling. Four units per bay spaced 8 x 10 feet apart would provide the most desirable illumination and should be recommended wherever possible.

"In buildings where this layout is employed, there will be only two units in the bay nearest the wall when the bays across the end of the room are even in number. The distance from the units to the wall will be 8 feet and if there are benches along that wall, additional lighting should be provided. Where the number of bays is odd, the bays at both outside walls will have four units which will provide adequate illumination for those working on the benches."

When it is remembered how much the excellence of lighting depends upon proper placing of outlets, it will be realized how important it is that care be given to their part in a lighting system.

SERVICE SECTION of THE ARCHITECTURAL FORUM

Information on economic aspects of construction and direct service for architects on subjects allied to building, through members of THE FORUM Consultation Committee

The Mid-Year Building Situation

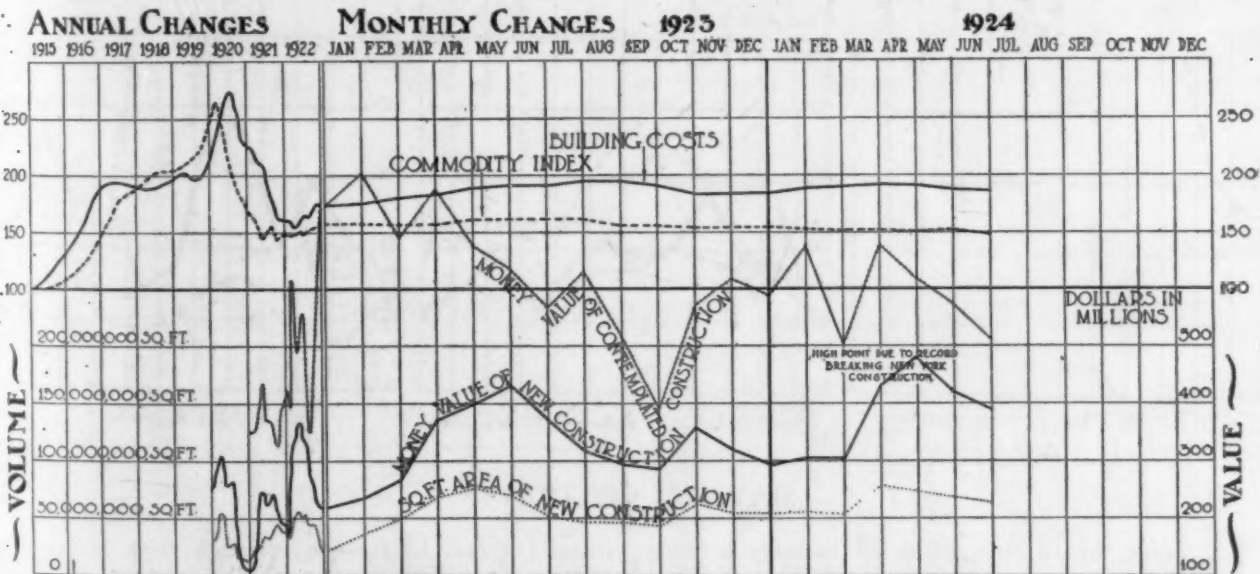
THE record of building contracts placed during the first six months of 1924 now being available makes it possible to analyze the first half of what promises to be the largest building year in the history of the construction industry. Running through figures of the F. W. Dodge Company covering 36 Eastern states and adding the estimated amount of construction in the rest of the United States, there have been started in this country during the first six months of 1924 contracts amounting to over two and a half billion dollars. This is a record figure, being a 10 per cent increase over the first half of 1923.

The accompanying chart shows a monthly comparison of building activity in the 36 Eastern states covered by the Dodge figures. It will be noted that the total amount of money invested in new buildings has been greater in each month of 1924 than in 1923, except in the month of May. The month of June has shown a good record, contracts having been started in these 36 states amounting to nearly \$400,000,000, which is a decline of a little less than 8 per cent from the May figures and an increase of

almost 5 per cent over those of June of last year.

An important fact must be recognized, however, that the record figure for the first six months of this year is not representative of construction throughout the country. The New York and Southeastern districts have shown substantial increases, with record-breaking activity in New York City. In New England the increase has been moderate; the Middle Atlantic states have just equaled last year's record, and the Pittsburgh, Central Western and Northwestern districts have shown substantial declines in activity. All the important classes of construction, except the industrial class, have participated in the increase in construction volume. Industrial construction has declined considerably. Recapitulating the six months' record, the important building groups were thus represented:

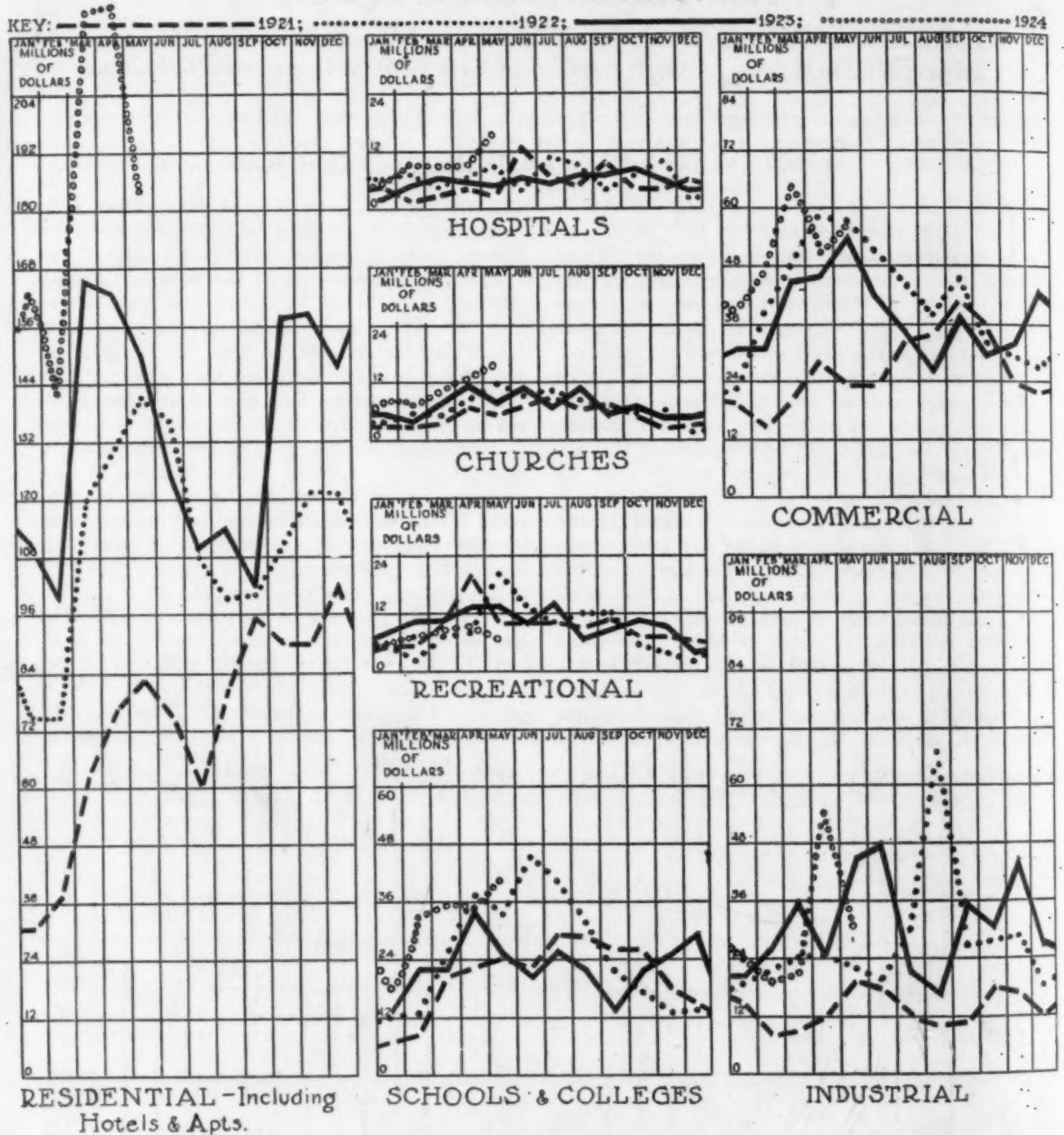
Forty-eight per cent of the total for residential buildings; 15 per cent for public works and utilities; 13 per cent for commercial buildings; 8 per cent for educational buildings, and a little under 8 per cent for industrial buildings. Figures quoted are from the statistics of the F. W. Dodge Company.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs*. This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index*. Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction*. Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Co., and *Engineering News-Record*. (4) *Money Value of New Construction*. Total valuation of all contracts actually let. The dollar scale is at the right of the chart in millions. (5) *Square Foot Area of New Construction*. The measured volume of new buildings. The square foot measure is at the left of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined first, by the trend of building costs, and second, by the quality of construction.

Monthly Analysis of the Trend of Building Activity

A study of the value of contracts let each month in seven important types of buildings—with graphic comparisons for the three preceding years



MAY 1924 CONTRACTS

IN order that a comparison of monthly activity may be made at a glance, the value of contracts let is presented in the above graphic charts. This information is based on data obtained through the United States Chamber of Commerce and the F. W. Dodge Company. The activity of each year is shown by a special line according to the key indicated at the top of the page. Thus, on each chart the activity in the form of Money Value of Con-

tracts Let may be followed through from January, 1921, to the most recent month for which figures were available when this page was printed. Not only is a rapid comparison provided of the total activity each year, but the relative activity for each month can be estimated by referring to the index figures representing millions of dollars as shown at the left of each chart. Reports cover about three-quarters of the total building in the United States.

Table Showing Average Prices Paid. by Contractors for Building Materials at Local Distributing Points as of June 1, 1924.
Division of Building and Housing of the Bureau of Standards from Prices Secured through the Bureau of Census

BUILDING MATERIAL PRICES

| Commodities | Size or Condition | Unit | Fitchburg | Haverhill | New Bedford | Fitchburg | Rockport | Buffalo | Cleveland | Akron | Lorain | Co. Columbus | St. Paul | Waterloo | South Bend | Spokane | Seattle | Portland, Ore. | Milwaukee | San Antonio | Los Angeles |
|--------------------------|---------------------------|---------------|-----------|-----------|-------------|-----------|----------|---------|-----------|-------|--------|--------------|----------|----------|------------|---------|---------|----------------|-----------|-------------|-------------|
| Common brick | Excl. of containers. | 1,000 | 23.00 | 26.50 | 27.00 | 17.00 | 16.75 | 26.00 | 16.00 | 16.00 | 21.00 | 115.00 | 14.50 | 17.00 | 16.50 | 16.50 | 13.50 | 18.00 | 38.00 | 55.00 | 28.00 |
| Portland Cement | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| Yellow Pine No. 1 | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| Douglas Fir No. 1 | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| N. Carolina Pine No. 1 | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| Common Boards No. 1 | 1x6 | M | 50.00 | 45.00 | 45.00 | 52.00 | 50.00 | 52.00 | 50.00 | 50.00 | 38.00 | 130.00 | 32.00 | 32.00 | 25.00 | 30.00 | 43.00 | 45.00 | 55.00 | 45.00 | 47.00 |
| V.P. Flooring Edge Grain | 1x4-10'-16' | M | 110.00 | 126.00 | 110.00 | 52.00 | 50.00 | 52.00 | 50.00 | 50.00 | 38.00 | 130.00 | 32.00 | 32.00 | 25.00 | 30.00 | 43.00 | 45.00 | 55.00 | 45.00 | 47.00 |
| Douglas Fir V. G. No. 2 | 1x4-10'-16' | M | 6.50 | 6.20 | 6.00 | 6.50 | 6.75 | 6.50 | 6.50 | 6.50 | 10.40 | 10.40 | 6.20 | 7.25 | 7.25 | 6.50 | 6.00 | 6.00 | 6.75 | 6.80 | 8.80 |
| Red Cedar Shingles | Extra Clear 16" 5 to 2 | 100 sq. ft. | 30.00 | 45.00 | 50.00 | 37.50 | 45.00 | 45.00 | 45.00 | 45.00 | 32.50 | 32.50 | 32.50 | 32.50 | 32.50 | 30.00 | 30.00 | 30.00 | 40.00 | 40.00 | 40.00 |
| Cypress Shingles | Extra Clear 16" 5 to 2 | 100 sq. ft. | 25.00 | 40.00 | 20.00 | 24.00 | 22.00 | 22.00 | 22.00 | 22.00 | 14.25 | 14.25 | 16.00 | 19.50 | 16.00 | 17.50 | 20.00 | 18.00 | 20.00 | 20.00 | 20.00 |
| Gypsum plaster board | Crushed Slate Surfaced | 1,000 sq. ft. | 1.80 | 2.50 | 1.65 | 2.50 | 3.00 | 3.04 | 2.30 | 3.04 | 2.30 | 2.30 | 1.89 | 3.70 | 2.75 | 1.25 | 1.50 | 2.25 | 2.25 | 2.25 | 2.25 |
| Lime | Hyd. | Ton | 3.25 | 2.50 | 3.25 | 5.50 | 3.50 | 3.50 | 3.50 | 3.50 | 3.60 | 3.60 | 2.35 | 2.75 | 2.75 | 3.25 | 3.25 | 3.00 | 3.75 | 3.65 | 3.65 |
| Building sand | 3/4" | Ton | 4.00 | 4.40 | 4.75 | 3.15 | 3.15 | 3.15 | 3.15 | 3.15 | 3.60 | 3.60 | 3.90 | 3.90 | 4.25 | 3.90 | 3.75 | 3.65 | 4.00 | 3.85 | 3.85 |
| Crushed stone | 3/4" | Ton | 4.00 | 4.40 | 4.75 | 3.15 | 3.15 | 3.15 | 3.15 | 3.15 | 3.60 | 3.60 | 3.90 | 3.90 | 4.25 | 3.90 | 3.75 | 3.65 | 4.00 | 3.85 | 3.85 |
| Wire nails | Single A 10"x12" | 50 sq. ft. | 4.50 | 4.27 | 5.95 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.25 | 2.25 | 5.80 | 4.40 | 4.40 | 4.80 | 5.00 | 5.10 | 4.34 | 5.10 | 5.10 |
| Window glass | 8"x12"x12" | Each | .30 | .30 | .32 | .18 | .18 | .18 | .18 | .18 | .25 | .25 | 64.90 | 88.00 | 11.87 | 15 | 20 | 16 | 22 | 23 | 23 |
| Hollow tile | 4" E.H. 13 lbs. per ft. | Ton | 100 | 100 | 100 | 9.86 | 9.86 | 9.86 | 9.86 | 9.86 | 60.00 | 60.00 | 10.00 | 10.50 | 11.87 | 10.70 | 10.50 | 11.95 | 9.53 | 9.53 | 9.53 |
| Cast iron soil pipe | 1" galv. | 100 lbs. | 3.50 | 3.50 | 3.50 | 3.43 | 3.43 | 3.43 | 3.43 | 3.43 | 3.50 | 3.50 | 3.67 | 3.50 | 3.50 | 4.60 | 3.35 | 3.35 | 4.00 | 3.75 | 3.75 |
| Steel pipe | 4" square | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| Reinforcement bars | Fab. 6" I beams. | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| Structural steel | Dry | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| White lead | Dry | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| Zinc oxide | Am. process lead free. | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| Gypsum plaster | Neat | Ton | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 | 21.00 | 19.00 | 20.00 | 19.00 | 19.00 | 19.00 | 21.00 | 16.40 | 24.00 | 21.00 | 14.50 |
| Linseed oil | Raw, in bbls. | Gal. | 1.05 | 1.05 | 1.05 | 1.35 | 98 | 98 | 98 | 98 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.02 | 1.10 | 1.40 | 1.00 | 1.50 | 1.05 |
| Roofing slate | No. 1 ribbon. | 100 sq. ft. | 2.75 | 2.75 | 2.75 | 14.25 | 14.25 | 14.25 | 14.25 | 14.25 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.02 | 1.10 | 1.40 | 1.00 | 1.50 | 1.05 |
| Tar paper, roofing | 2-ply 75 lbs. per roll of | 100 sq. ft. | 2.75 | 2.75 | 2.75 | 14.25 | 14.25 | 14.25 | 14.25 | 14.25 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.02 | 1.10 | 1.40 | 1.00 | 1.50 | 1.05 |
| Rosin sized sheathing | 3-ply 30 lbs. per roll of | 500 sq. ft. | 1.60 | 1.60 | 1.60 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.02 | 1.10 | 1.40 | 1.00 | 1.50 | 1.05 |
| Common brick | Excl. of containers. | 1,000 | 23.00 | 26.50 | 27.00 | 17.00 | 16.75 | 26.00 | 16.00 | 16.00 | 21.00 | 115.00 | 14.50 | 17.00 | 16.50 | 16.50 | 13.50 | 18.00 | 38.00 | 55.00 | 28.00 |
| Portland Cement | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| Yellow Pine No. 1 | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| Douglas Fir No. 1 | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| N. Carolina Pine No. 1 | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| Common Boards No. 1 | 1x6 | M | 50.00 | 45.00 | 45.00 | 52.00 | 50.00 | 52.00 | 50.00 | 50.00 | 38.00 | 130.00 | 32.00 | 32.00 | 25.00 | 30.00 | 43.00 | 45.00 | 55.00 | 45.00 | 47.00 |
| V.P. Flooring Edge Grain | 1x4-10'-16' | M | 110.00 | 126.00 | 110.00 | 52.00 | 50.00 | 52.00 | 50.00 | 50.00 | 38.00 | 130.00 | 32.00 | 32.00 | 25.00 | 30.00 | 43.00 | 45.00 | 55.00 | 45.00 | 47.00 |
| Douglas Fir V. G. No. 2 | 1x4-10'-16' | M | 6.50 | 6.20 | 6.00 | 6.50 | 6.75 | 6.50 | 6.50 | 6.50 | 10.40 | 10.40 | 6.20 | 7.25 | 7.25 | 6.50 | 6.00 | 6.00 | 6.75 | 6.80 | 8.80 |
| Red Cedar Shingles | Extra Clear 16" 5 to 2 | 100 sq. ft. | 30.00 | 45.00 | 50.00 | 37.50 | 45.00 | 45.00 | 45.00 | 45.00 | 32.50 | 32.50 | 32.50 | 32.50 | 32.50 | 30.00 | 30.00 | 30.00 | 40.00 | 40.00 | 40.00 |
| Cypress Shingles | Extra Clear 16" 5 to 2 | 100 sq. ft. | 25.00 | 40.00 | 20.00 | 24.00 | 22.00 | 22.00 | 22.00 | 22.00 | 14.25 | 14.25 | 16.00 | 19.50 | 16.00 | 17.50 | 20.00 | 18.00 | 20.00 | 20.00 | 20.00 |
| Gypsum plaster board | Crushed Slate Surfaced | 1,000 sq. ft. | 1.80 | 2.50 | 1.65 | 2.50 | 3.00 | 3.04 | 2.30 | 3.04 | 2.30 | 2.30 | 1.89 | 3.70 | 2.75 | 1.25 | 1.50 | 2.25 | 2.25 | 2.25 | 2.25 |
| Lime | Hyd. | Ton | 3.25 | 2.50 | 3.25 | 5.50 | 3.50 | 3.50 | 3.50 | 3.50 | 3.60 | 3.60 | 2.35 | 2.75 | 2.75 | 3.25 | 3.25 | 3.00 | 3.75 | 3.65 | 3.65 |
| Building sand | 3/4" | Ton | 4.00 | 4.40 | 4.75 | 3.15 | 3.15 | 3.15 | 3.15 | 3.15 | 3.60 | 3.60 | 3.90 | 3.90 | 4.25 | 3.90 | 3.75 | 3.65 | 4.00 | 3.85 | 3.85 |
| Crushed stone | 3/4" | Ton | 4.00 | 4.40 | 4.75 | 3.15 | 3.15 | 3.15 | 3.15 | 3.15 | 3.60 | 3.60 | 3.90 | 3.90 | 4.25 | 3.90 | 3.75 | 3.65 | 4.00 | 3.85 | 3.85 |
| Wire nails | Single A 10"x12" | 50 sq. ft. | 4.50 | 4.27 | 5.95 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.25 | 2.25 | 5.80 | 4.40 | 4.40 | 4.80 | 5.00 | 5.10 | 4.34 | 5.10 | 5.10 |
| Window glass | 8"x12"x12" | Each | .30 | .30 | .32 | .18 | .18 | .18 | .18 | .18 | .25 | .25 | 64.90 | 88.00 | 11.87 | 15 | 20 | 16 | 22 | 23 | 23 |
| Hollow tile | 4" E.H. 13 lbs. per ft. | Ton | 100 | 100 | 100 | 9.86 | 9.86 | 9.86 | 9.86 | 9.86 | 60.00 | 60.00 | 10.00 | 10.50 | 11.87 | 10.70 | 10.50 | 11.95 | 9.53 | 9.53 | 9.53 |
| Cast iron soil pipe | 1" galv. | 100 lbs. | 3.50 | 3.50 | 3.50 | 3.43 | 3.43 | 3.43 | 3.43 | 3.43 | 3.50 | 3.50 | 3.67 | 3.50 | 3.50 | 4.60 | 3.35 | 3.35 | 4.00 | 3.75 | 3.75 |
| Steel pipe | 4" square | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| Reinforcement bars | Fab. 6" I beams. | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| Structural steel | Dry | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| White lead | Dry | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| Zinc oxide | Am. process lead free. | 100 lbs. | 13.50 | 14.50 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | 13.20 | 13.20 | 4.00 | 5.00 | 4.85 | 6.00 | 6.00 | 5.25 | 6.50 | 3.90 | 3.90 |
| Gypsum plaster | Neat | Ton | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 | 24.00 | 21.00 | 19.00 | 20.00 | 19.00 | 19.00 | 19.00 | 21.00 | 16.40 | 24.00 | 21.00 | 14.50 |
| Linseed oil | Raw, in bbls. | Gal. | 1.05 | 1.05 | 1.05 | 1.35 | 98 | 98 | 98 | 98 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.02 | 1.10 | 1.40 | 1.00 | 1.50 | 1.05 |
| Roofing slate | No. 1 ribbon. | 100 sq. ft. | 2.75 | 2.75 | 2.75 | 14.25 | 14.25 | 14.25 | 14.25 | 14.25 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.02 | 1.10 | 1.40 | 1.00 | 1.50 | 1.05 |
| Tar paper, roofing | 2-ply 75 lbs. per roll of | 100 sq. ft. | 2.75 | 2.75 | 2.75 | 14.25 | 14.25 | 14.25 | 14.25 | 14.25 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.02 | 1.10 | 1.40 | 1.00 | 1.50 | 1.05 |
| Rosin sized sheathing | 3-ply 30 lbs. per roll of | 500 sq. ft. | 1.60 | 1.60 | 1.60 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.02 | 1.10 | 1.40 | 1.00 | 1.50 | 1.05 |
| Common brick | Excl. of containers. | 1,000 | 23.00 | 26.50 | 27.00 | 17.00 | 16.75 | 26.00 | 16.00 | 16.00 | 21.00 | 115.00 | 14.50 | 17.00 | 16.50 | 16.50 | 13.50 | 18.00 | 38.00 | 55.00 | 28.00 |
| Portland Cement | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | 2.80 | 2.90 | 2.90 | 2.90 | 3.00 | 3.00 | 3.00 | 3.00 |
| Yellow Pine No. 1 | Dimensions 2x4-16' | SISTIE | 3.25 | 3.40 | 3.40 | 3.43 | 3.10 | 3.40 | 3.40 | 3.20 | 3.40 | 3.20 | 2.80 | | | | | | | | |

THE FORUM CONSULTATION COMMITTEE

A group of nationally known experts on various technical subjects allied to building, providing a direct service to architects

THE editors of THE ARCHITECTURAL FORUM have been fortunate in obtaining the cooperation of the following recognized experts who constitute THE FORUM Consultation Committee. This Committee provides a service of the greatest value to subscribers in addition to the usual editorial service, and architects who seek information on specific questions in these various fields are invited to present inquiries.

The basis on which this Committee has been organized is:

- (a) That each committee member shall be a representative leader in his line;
- (b) That no committee member has affiliations with any manufacturer;
- (c) That no committee member will be called upon for detailed service excepting by special arrangement;
- (d) That a special editorial article on a subject represented under each of the headings below shall be prepared during the year by the committee member.

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NILS T. SELLMAN

Service Engineer, American Gas Association

A specialist in problems pertaining to gas service and its use in all classes of buildings and industries.

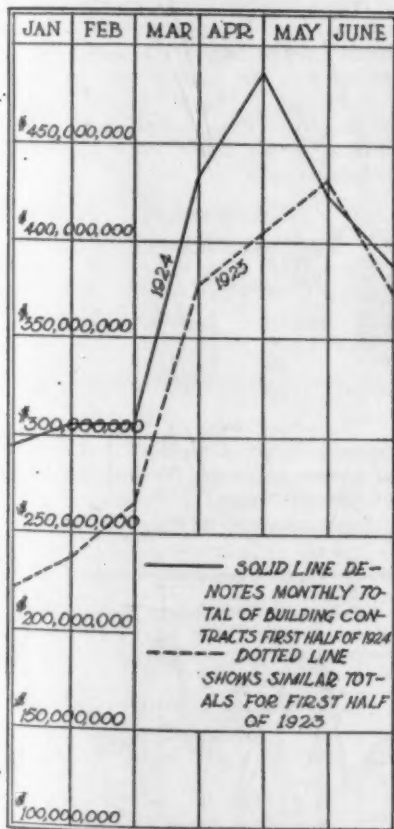
THE FORUM DIGEST

A SURVEY OF IMPORTANT CURRENT ARTICLES ON BUILDING ECONOMICS AND BUSINESS CONDITIONS AFFECTING CONSTRUCTION

The Editors of this Department select from a wide range of publications matter of definite interest to Architects which would otherwise be available only through laborious effort

Analysis of Mid-Year Building Conditions

WHEN analyzing the contract records for the first six months of 1924 it is also of interest to consider the variations of building costs. The variation of the cost trend line as estimated by THE ARCHITECTURAL FORUM will be found in the chart on the first page of this Service Section. Another record cost fluctuation is maintained by *Engineering News-Record* in the form of an index number based on variations in the costs of steel, lumber, cement and common labor. This index would naturally be higher and vary more than a composite index including many more factors, but it is quite interesting to examine its trend for the first six



Comparison of values of building contracts in first half of 1923 and of 1924, latter showing 10 per cent greater activity; bulk of increase in New York. Figures, F. W. Dodge Co.

months of 1924 as compared with those first six months of 1923. Accompanying this article will be found a chart showing the cost variation under an index figure built up of the four factors already mentioned.

Just how much building activity may be anticipated in the second half of 1924 is problematical, but general conditions indicate that while the crest of the wave of speculative building is past, a number of substantial deferred projects will come into the market. This forecast is justified from reports in many architects' offices, which indicate that many high class projects are being reconsidered by owners who were frightened out of the market by increasing costs and by the great demand of material and labor due to construction of a more speculative nature. The general building situation throughout the country may be gauged to a certain extent by these opinions received from Federal Reserve Banks in the various districts as reported July 1:

New York District

"Contracts for building construction awarded during May in 36 states were 13 per cent smaller than in April and 3 per cent smaller than in May a year ago, according to the F. W. Dodge Company. The decline from April resulted chiefly from a decrease of 35 per cent in the New York District, following the very large reduction during April in building permits issued in New York City. For all other reporting sections awards in May were practically the same as in April.

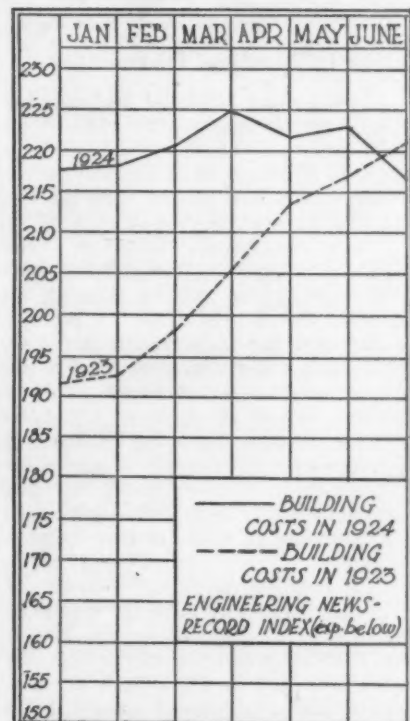
"The decline in the New York District was due largely to a further decrease in residential awards, which accounted for 49 per cent of the total construction in May, compared with an average of 60 per cent in the preceding four months. Both in this district and in other reporting districts, however, residential awards continued to be larger than last year.

"Notwithstanding the considerable decline in May, the monthly average of total contracts awarded throughout the country during the first five months of this year was 12 per cent larger than for the corresponding

period of last year. A diagram given here, comparing the average monthly contract awards both by sections of the country and by types of construction, indicates the importance of residential building, particularly in the New York District, in these totals."

Philadelphia District

"Declining building activity in May and June, probably slightly less than in similar period last year. Demand for building materials is not as strong as it was in the spring season of 1923, and in general building projects are not as large in size or in general of as high a quality as during the past year. There is a fair supply of skilled and unskilled workers in the building industries and in manufacturing plants. It is anticipated that there will be a considerable development of activity in the fall of 1924."



Comparison of building costs, first six months 1923 and 1924, based on fluctuations in prices of steel, Portland cement, lumber, and common labor. From *Engineering News-Record* Index.

New England District

"Contracts awarded in May show a considerable increase over April and a higher total than in May of 1923. Business and industrial building was considerably less than in May of last year, but residential and institutional building has shown an increase."

Minneapolis District

"Prospective building activity, as evidenced by the valuation of building permits granted in 18 cities of this District, was 12 per cent greater in May than in April. The number of permits granted was about the same in both months, and as a result the average building permit, which furnishes a good test of the state of business confidence, increased in size, although normally there is little change at this time of year. As compared with May a year ago, both the number and valuation of permits granted during May were more than one-fifth smaller."

"The city real estate situation in this District on June 1, according to the semi-annual report of the National Association of Real Estate Boards, was in a state of equilibrium between supply and demand. In the majority of the cities reported for, there was neither a shortage of structures, either for residential or business purposes, nor an over-built condition. Minneapolis was the outstanding exception to this statement. The Minneapolis Real Estate Board reported an over-built condition in small stores and duplexes and no shortage of other types of buildings."

Cleveland District

"The feeling that the building industry is slackening continues to be quite general. Then, too, activity appears to be centered in the completing of old contracts rather than in the starting of new."

"May operations, however, continued at a high rate, nine representative cities in this District showing an increase in the valuation of permits issued over the same month last year, as against four which showed a decrease. The total valuation of May permits in the 13 cities was \$2,124,846 higher than for May, 1923, or an increase of 9.9 per cent. A slight improvement in weather conditions and the customary seasonal increase were contributing factors in this greater activity."

"In the metropolitan district of Cleveland the May advance was very evident. As compiled by the Builders' Exchange the record for building permits issued in the month of May within the city proper shows 1,890 certificates approved calling for an expenditure of \$6,802,520 in comparison with 1,774 approved at an expenditure of \$4,619,075 for May, 1923. The totals for the first five months of this year aggregate an estimated expenditure in permits is-

sued of \$26,288,515 in contrast with \$24,650,750 for the corresponding five months in 1923. As for individual operations, the total for which permits were issued during the five months this year was 7,380 as against 6,560 in the same period last year, indicating that the variety of building projects is being maintained."

"The story of the suburbs, however, is not so good, a decrease being evidenced for the seven leading suburbs from a total of \$16,582,093 for the first five months of 1923 to \$14,017,247 for the corresponding period this year. It would appear from this that the home-building program is less vigorous than a year ago. The loss in the suburbs is compensated for by the gain in the city proper, so it may be said that the present year, thus far, is running even with its predecessor."

"A decrease is shown in the five months comparison for the District, the valuation of buildings permitted for in 13 cities in the first five months of this year being \$1,489,241 or 1.5 per cent less than for the same period a year ago."

"A more comfortable situation exists in the supply of materials than was the case last year. In some trades there is a slight surplus of workmen, while in others the call is about even with the supply. Wages have not decreased, but it is reported by contractors that a considerable improvement is noted in efficiency on the part of the various workmen."

"The Association of Building Employers reports that the construction industry has enjoyed a peaceful year to date. Many new agreements, some of them extending for two or three years, have been negotiated. In most instances the new rates are higher than the old, but whereas last year bonuses were paid in most of the trades, this year the rates are generally being adhered to. Common labor is reported plentiful, and the supply of skilled labor is equal to the demand with the possible exception of bricklayers and plasterers."

"The costs of some building materials have remained steady while others have shown slight reductions. Favorable weather has improved the demand to some considerable extent."

St. Louis District

"The value of building permits issued in the five largest cities of the District during May fell sharply below the record total of April, but was only 3.8 per cent under the aggregate of May, 1923. Building operations in the large centers continued at an active pace during the period under review, with residential construction still occupying an important place in the general activity. Reports from the smaller towns and rural districts in the south reflect extensive home-building, particularly of small residences. Road-building has been badly hampered by excessive rainfall, but it is planned to push forward the highway construction programs as soon as weather conditions will permit. The trend of prices of building materials was slightly downward, and many manufacturers have caught up with their orders, with some reporting moderate accumulations."

Kansas City District

"The reports from cities in the Tenth District indicate that 1924 is the second best year in building since 1919, and probably for all time. During the first five months of the current year a total of 13,826 permits were issued in 18 cities for buildings to cost \$39,741,533. These totals indicate a decrease of 10.4 per cent in the number of permits and a decrease of 21.5 per cent in the estimated cost of construction as compared with the returns for the first five months in 1923, which was the banner year in building history. The 1924 figures, however, exceed those for the five months period in all other years, which is indicated here:

| | Cities Reporting | Permits Issued | Estimated Cost |
|---------|------------------|----------------|----------------|
| 1924 .. | 18 | 13,826 | \$39,741,533 |
| 1923 .. | 18 | 15,441 | 50,622,426 |
| 1922 .. | 19 | 12,969 | 37,027,576 |
| 1921 .. | 18 | 11,102 | 26,114,050 |
| 1920 .. | 18 | 10,515 | 38,977,090 |
| 1919 .. | 16 | 7,499 | 17,176,414 |

"The May returns from the cities show a large volume of building in progress, although the month's totals of permits issued and estimated cost did not come up to the record for the

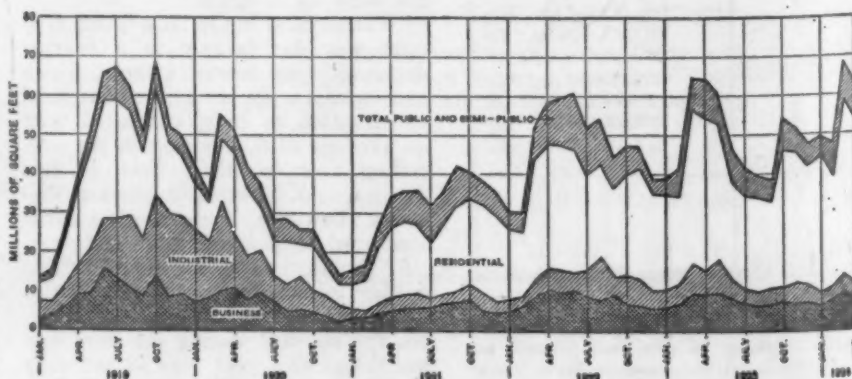
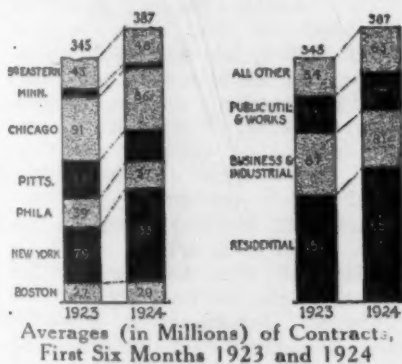


Chart Showing Volume of Building Contracts by Classes
From Survey of Current Business, June, 1924

fifth month of last year. Unfavorable weather conditions and some unsettlement in the market for building materials were among the factors which had retarded building in these cities. A large number of important buildings are in prospect for the summer and fall season."

Texas District

"Activity in building operations continued to decline during May, as is evidenced by the decline in building permits issued at 11 of the larger cities of the Eleventh Federal Reserve District. That this decline was general throughout practically the entire district is shown by the fact that Dallas and Fort Worth were the only cities showing an increase in building permit valuations as compared to the previous month, and Beaumont and Dallas were the only cities showing increases as compared to May, 1923. There was a decline of 14.9 per cent in the valuation of permits issued during May as compared to April, and 11.1 per cent as compared with May, 1923. The number of permits issued declined 16 per cent as compared to April, and 14.8 per cent as compared with May, 1923. There were 2,620 permits having a valuation of \$6,231,771 issued during May, which compared to 3,118 permits issued during the previous month having a valuation of \$7,319,650, and 3,075 permits with a valuation of \$7,010,064 issued during the corresponding month of 1923.



"For the third consecutive month the total valuation of permits issued during the period since January 1 was less than that of those issued during the corresponding period of the previous year, there being a decrease of 4.5 per cent as compared with the same period of 1923."

San Francisco District

"A definite, though slight, downward trend in building activity is indicated by figures of building permits issued in principal cities of this District during recent months. In May, for the second consecutive month, the value of prospective building permitted was less than in the preceding month, and, for the third consecutive month, it was less than in the corresponding month a

year ago. The decline for May, 1924, compared with May, 1923 (18.7 per cent), was greater than the estimated decline of building costs over the same period. The United States Department of Labor index number of building materials prices stood at 180 in May, 1924 (1913 prices=100). This is 1.9 per cent lower than a month ago, and 10.2 per cent less than a year ago (1923 peak). The Aberthaw index number of the total cost of constructing a reinforced concrete factory building stood at 199 on June 1, 1924 (100 in 1915), compared with 200 on May 1, 1924, and 207 on June 1, 1923, the most recent peak."

The general consensus of opinion seems to indicate that the coming fall will introduce another period of considerable activity in the building field, and that 1924 will at least equal the record of 1923 in the amount of money spent in this country for new building construction.

PLACING STRUCTURAL RESPONSIBILITY

THE joint meeting of architects, engineers, and contractors held in St. Louis recently for the purpose of discussing the relationship and responsibility of the architect and engineer in the matter of safety in building construction, says the *American Contractor*, points to a tendency in these professions that is of profound interest to contractors.

"During the last year several conventions of contractors have discussed the unwillingness of architects to assume full responsibility for their structural designs and for the accuracy of their plans. At the convention of the Associated Building Employers of Michigan, held February 5 at Grand Rapids, N. J. Kennedy assailed those incompetent architects who allowed the whims of owners to dictate the specification of unfit materials and building equipment, who turned out defective or incomplete plans and specifications, or who insisted on having the contractor submit shop drawings of sections of a structure which the architect felt himself incapable of designing.

"Mr. Kennedy pointed out that when contractors have to hire draftsmen to correct poor drawings; when they are forced to design and coordinate structures from incomplete sketches while the architect refuses to surrender any of his authority over the direction of the job and at the same time refuses to assume full responsibility in that direction, a situation exists which is gradually forcing the contractors to enter architectural and engineering practice.

"In view of this and similar adverse criticism the action of the architects and engineers of St. Louis represents a timely move. Certainly if any action is to be taken that will fix firmly on the architect and engineer the responsibility for design,

it is best to have the parties in question initiate the movement.

"At the St. Louis meeting a long discussion occurred on certain phases of responsibility for designs. Nothing definite was decided on except that the meeting had struck on one of the major problems of the building industry.

"The present ill-defined nature of an architect's responsibility goes more deeply into the vital problems of the contracting business than is indicated by the surface manifestation of a score or so of buildings in a state of collapse. At the future meetings of architects, engineers, and contractors the other aspects of the subject ought to be taken up candidly. By cooperative effort a better definition of building responsibility can be laid down and gradually adopted as a standard of practice, thereby not only providing for safety in design but eliminating many basic evils in the construction industry. Hopes for such an outcome may appear to the contractor to border on Utopianism; yet the fact that architects and engineers are seriously questioning their own position is a favorable symptom."

SIMPLIFICATION OF BUILDERS' HARDWARE

STEPS which will affect the building industry of the entire country were taken in June when manufacturers, distributors and representatives of consumers of builders' hardware, meeting under the auspices of the Division of Simplified Practice in the Department of Commerce, went on record in favor of wholesale reductions in the numbers of sizes, models and finishes of locks and lock trim, butts and hinges and shelf and miscellaneous builders' hardware. The reductions as adopted represent 26 per cent of the 7,000 items manufactured by the leading makers of builders' hardware.

Estimates presented at the meeting by I. J. Fairchild of the United States Bureau of Standards, who has spent a number of months in a study of the problems of the builders' hardware manufacturers, placed the amount to be spent in this item of construction at \$90,000,000 for 1924. He pointed out that in 27 states the building permits for March reached a sum of \$386,483,000, of which an average of 2 per cent, or \$7,730,000 will be spent on builders' hardware. These permits, he said, were divided thus: residences, 53 per cent; educational and other public and semi-public buildings 16½ per cent; business, 15 per cent, and industrial, 5 per cent. The recommendations for eliminations were based on studies of sales records of the principal manufacturers by a special advisory committee which was appointed in November, 1922, when the reduction of excess variety was brought to a focus.

HOW PROPER INSULATION CUTS FUEL COSTS ONE-THIRD

TODAY, science is helping the home lover to plan and build his home," says *The Permanent Builder*. "Many are the ways he can cut corners and save in material, in space, and labor. Science is really helping to solve the problem because science has discovered so many useful and necessary things for the modern home.

"A few years ago it would have sounded preposterous to say that a man could build a home to save one-third of his fuel bill. This is not a general statement, but a reality. To build a warm, cozy home that will not eat fuel like a glutton is not only possible, but is actually being done by the man who studies his plans and specifications thoroughly. It costs no more to build a home that will save fuel, than one that will not.

"The coal required to heat a house is only that necessary to supply the heat loss through the walls, doors, and windows, due to the difference in temperature between the inside and the outside of the house. Heat is lost from a building in two ways; first, by infiltration, or air leakage, and second, by conduction through the walls, doors and windows. Infiltration losses vary with the building construction, and with the wind velocity outside. A small amount may take place through the walls, but the greater losses are through the cracks and openings around the doors and windows. In the average house it may be assumed that the leakage amounts to one complete air change per hour, and that to take care of this, heat must be supplied each hour to raise the temperature of the air entering from the outside to 70 deg. Fahrenheit. It is logical, of course, that infiltration losses may be partly compensated for by the ventilation, but, as a rule, the air is not brought in at the proper place, nor in the right quantity for ventilation, and the heat so carried away is a total loss.

"Most every building material offers some resistance to the passage of heat and cold; even a thin metal sheet enclosure is somewhat better than nothing. Bricks, wood and plaster have some value, if of sufficient thickness. The construction commonly used in houses is accepted, only because the householder does not realize that it could be made very much better.

"Some years ago, various forms of insulating materials came on the market but they were actually used only in climates which demanded insulation. That is why the word insulation is so common today with the builders in the great northwest.

"Obviously, if a house in the northwest needs to be insulated, to keep out the cold, why should not a house

built in the sunny south also be insulated to keep out the heat? Isn't it worth as much to be cool and comfortable in your own home in summer as to be comfortable and save fuel in winter?

"Now insulating lumber is in wide use in the American and most foreign markets and has met with unheard of success. The wonderful thing about it all is that this insulating lumber is manufactured from sugar cane fiber after the juice has been extracted. Formerly, this cane fiber, or 'bagasse,' as it is called in the south, was used only for a low-grade fuel. It was tough and cumbersome, would not rot, and simply had to be disposed of each year. Now this cane fiber is utilized in making insulated lumber. Tests by leading engineers show that it is one of the poorest conductors of heat known, therefore, its efficiency for insulation. Careful tests which have been made of the passage of heat through the materials commonly used show that their values are known. These values are expressed technically in terms of British thermal units per square foot of surface through one inch of thickness of the material in one hour of each degree difference in temperature. Thus, a piece of insulating lumber 1 foot square and 1 inch thick will permit the passage of 0.3 B. t. u. in one hour, if the temperature on one side is one degree greater than on the other side. With 10 degrees difference the heat loss will be ten times as great, or 3.3 B. t. u. If the insulation is only one-half as thick, the conduction will be twice as great.

"It is very easy to insulate a house with insulating lumber. It is applied to the outside walls of a frame house directly to the outside of the studs taking the place of wood sheathing and building paper. Inside, the insulating lumber may be applied to the studs to serve instead of lath as a base for plaster. In a locality where average prices prevail, the outside layer in place will cost less than sheathing and paper in place. The inside layer will cost somewhat more than the lath but will save some labor and material on the plastering, but the insulation always costs nothing. The two layers combined will practically solve the cost of the items they replace. The owner gets his walls thoroughly insulated at no additional cost above that of uninsulated construction. The attic also should be insulated. One layer of insulating lumber may be put on top of the attic joists. The saving of the lath will largely offset the cost of one layer. Thus the principle of ice house construction is applied to the modern home with the same results.

"It has truthfully been said that insulating lumber has the insulating value of cork. Because insulating

lumber replaces so many other materials in construction today, it is rapidly becoming one of the most important factors in home building.

"When it is considered that approximately one hundred million tons of coal are used each year for heating purposes, it is apparent what a place insulating lumber has made for itself in home building."

TO COÖRDINATE BUILDING MAINTENANCE WITH NEW CONSTRUCTION WORK

THE Philadelphia Building Congress is the first organization of its kind to officially appoint a Committee on the Coördination of Maintenance and Repairs with new Construction Work.

D. Knickerbacker Boyd, Architect, explains the activities of the congress, which are "to secure the coöperation of owners, managers and occupants in making a survey of the maintenance and repair requirements of buildings and structures in Philadelphia and vicinity, including federal, state and municipal work, to compile and classify such data and to make studies to determine the periods when labor on new construction work is least employed so that in every way possible maintenance work and alterations in existing structures may be done at such times as conflict least with new construction requirements and make for greater continuity of employment."

The Boston Building Congress and then the New York Congress, which in May increased its membership over 1,000 in a week, have been making similar recommendations. Now, however, comes official action by the Building Owners' and Managers' Association of Philadelphia, which after conferring with the Philadelphia Building Congress has taken this formal action:

"Resolved, that the Board of Directors of the Building Owners' and Managers' Association of Philadelphia recommend to all members and to all owners and managers of large buildings in Philadelphia that they defer such of their maintenance and repair work as can be conveniently postponed until such periods during the coming winter as there might be a lull, or easing-off of conditions, in the building and construction industry."

This action is being taken to help reduce the unemployment problem when winter comes again. Seasonal employment is recognized as one of the evils in the labor situation. Large numbers of men, by the nature of their profession or trade, are employed only a part of the year. A brief survey has disclosed that much repair work, now crowded into the summer months, could be done just as easily and perhaps more efficiently during the slack winter period.

SERVICE SECTION of THE ARCHITECTURAL FORUM

Information on economic aspects of construction and direct service for architects on subjects allied to building, through members of THE FORUM Consultation Committee

The Building Situation

REPORTS for the month of July indicate that the total construction activity has still continued at a higher rate than last year. According to the F. W. Dodge Corporation's statement for July, the total of contracts let amounted to \$347,184,300, which is 10 per cent less than the figure for June, but still 10 per cent over the figure for July of last year.

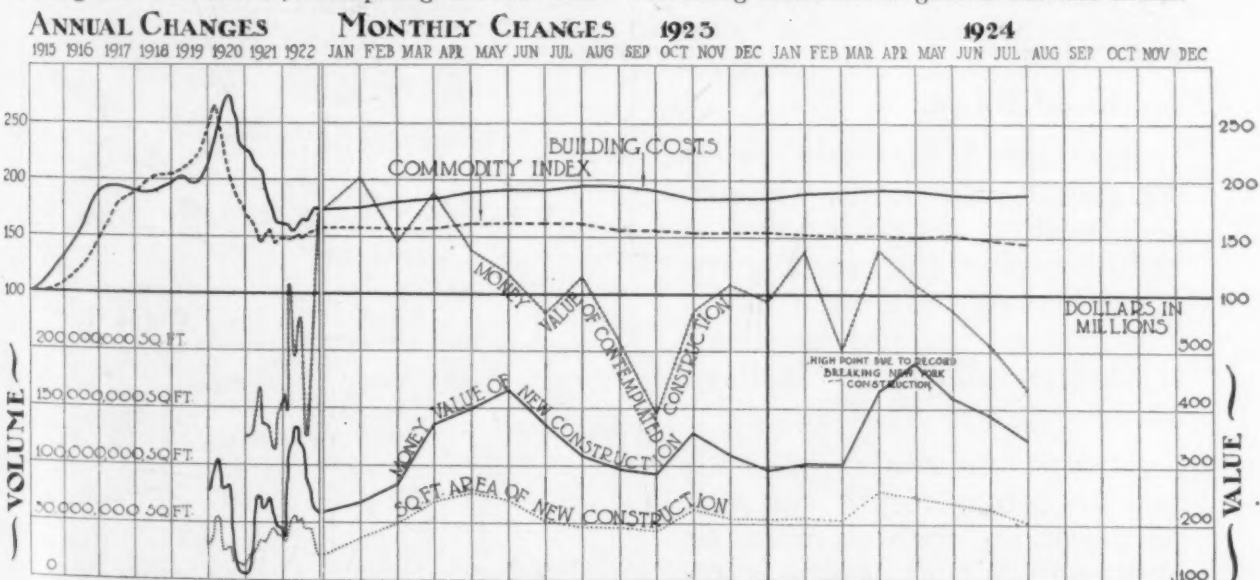
The changing character of construction activity is to be noted. Activity in the highly speculative types of construction is lessening, and this affects the residential totals, bringing them more nearly to a normal relative percentage. Perhaps a good reason for lessening in such activity is the fact that mortgage interests are deliberately discouraging speculative apartment house construction in sections where it is evident that the housing demand has been fairly well met. The speculator also finds a weaker market for the sale of properties built primarily on a rental income basis, and the result is that a number of high class residential buildings, public buildings and industrial building projects are coming into the market, anticipating a better situ-

ation in purchasing materials and in labor conditions.

The building material market generally has felt the seasonal decreasing of demand, and throughout the country available stocks are being enlarged.

The mortgage market continues firm, with a steady flow of investment and mortgage bonds and evident willingness on the part of mortgage companies to underwrite all reasonable building operations on a fairly liberal basis. It is anticipated that building totals will be made up of larger individual contracts during the remainder of this year, and that, as forecast by THE ARCHITECTURAL FORUM in January, this will unquestionably prove to be another \$5,000,000,000 building year.

From the viewpoint of architects the fall season should show a considerable increase in the number of buildings under planning for early construction. The passing of speculative activity opens the market for a better class of construction, and an increasing measure of stabilization in building costs has a tendency to bring delayed projects into active development, a condition which is also favored by increasing confidence in general business circles.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs*. This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index*. Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction*. Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record*. (4) *Money Value of New Construction*. Total valuation of all contracts actually let. The dollar scale is at the right of the chart in millions. (5) *Square Foot Area of New Construction*. The measured volume of new buildings. The square foot measure is at the left of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined first, by the trend of building costs, and second, by the quality of construction.



Views of the Hotel Cleveland and interior of Billiard Room mentioned in letter

billiards

a gentleman's game



HOTEL Cleveland

CLEVELAND, O.

April 19, 1924

The Brunswick Balke Collender Co.,
624-632 St. Clair Avenue, West,
Cleveland, Ohio.

ATTENTION: Mr. L. S. McLeod, Branch Manager.

Gentlemen:

We constantly receive compliments from our guests on the attractiveness of the billiard room which was equipped throughout by your company two years ago.

When we installed your beautiful and massive arcade tables, we felt that we must have a floor covering that would be in keeping with your equipment and with this in mind we furnished our billiard room with a \$2,500.00 rug; consequently, this creates an atmosphere similar to that of a perfectly appointed club. Our resident guests spend many pleasant hours enjoying the splendid recreation this room affords.

Apart from the consideration of furnishing exercise and amusement for those who live at our Hotel, we are highly pleased with the returns from this room.

Yours very truly,

THE CLEVELAND HOTEL COMPANY.
L. S. Spencer
Assistant to Manager.

LOS:2

THAT billiards is a PAYING investment in a fine hotel is well attested by the experience of the management of the Hotel Cleveland. Read the letter reproduced above.

As makers of the world's finest equipment for both billiards and bowling, we gladly offer to architects planning hotels, apartment houses and similar buildings our advice and assistance regarding plans for billiard rooms and bowling alleys.

Anyone interested in such assistance may secure our full co-operation, without cost or obligation, by addressing a request to our Chicago or any branch office.

The BRUNSWICK~BALKE~COLLENDER Company

Branch houses in the principal cities
in the United States and Canada

623~633 South Wabash Avenue, CHICAGO

SERVICE SECTION of THE ARCHITECTURAL FORUM

Information on economic aspects of construction and direct service for architects on subjects allied to building, through members of THE FORUM Consultation Committee

The Building Situation

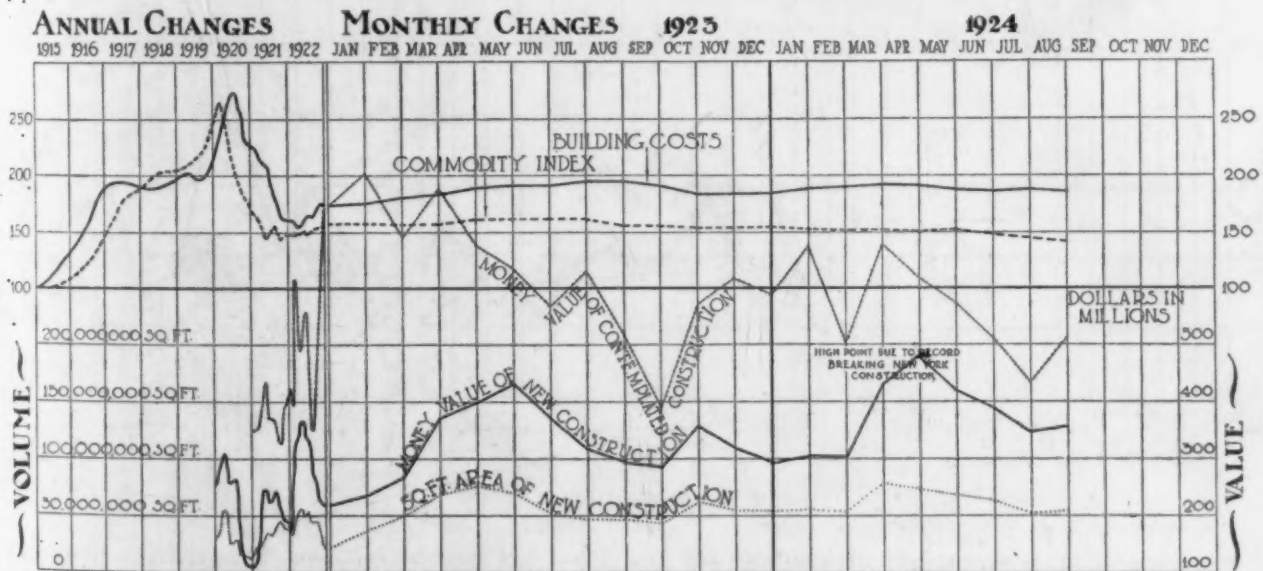
THE reports of contracts let and plans filed throughout the country, as based on figures of the F. W. Dodge Corporation, indicate a definite increase of building activity this fall, similar to that of last year. An examination of the chart below discloses several interesting facts. It will be noted that the value of plans filed turned suddenly upward in August, indicating a revival of interest, due probably to a decrease in the cost of building and to the fact that with the dying off of speculative activity, the stocks of building materials became larger so that a better opportunity is now offered for those who contemplate erecting buildings of an investment or a utility nature.

The value of contracts awarded in August is \$354,442,700, which is an increase over July of nearly 3 per cent, and an increase over August of last year of nearly 19 per cent. The total construction started in the United States during the first eight months of 1924 is valued at approximately \$3,500,000,000, which is an increase of 11 per cent over the corresponding period of 1923. This increase has been largely in the states east of the Mississippi, and par-

ticularly on the North and Middle Atlantic seaboard.

The value of contemplated new work reported in August amounted to \$506,386,100. During the year ending September 1, the excess reported contemplated work over contracts awarded was estimated at 53 per cent. This is said to be the lowest percentage of excess since the war, as 50 per cent is a normal excess figure. This may be an indication that the amount of deferred construction which may be expected to go ahead is not large at the present time. In the Middle Atlantic states, Southeastern states and Central West, it may be expected, however, that a considerable amount of deferred construction will go ahead in quantities sufficient to show a fair degree of activity this fall.

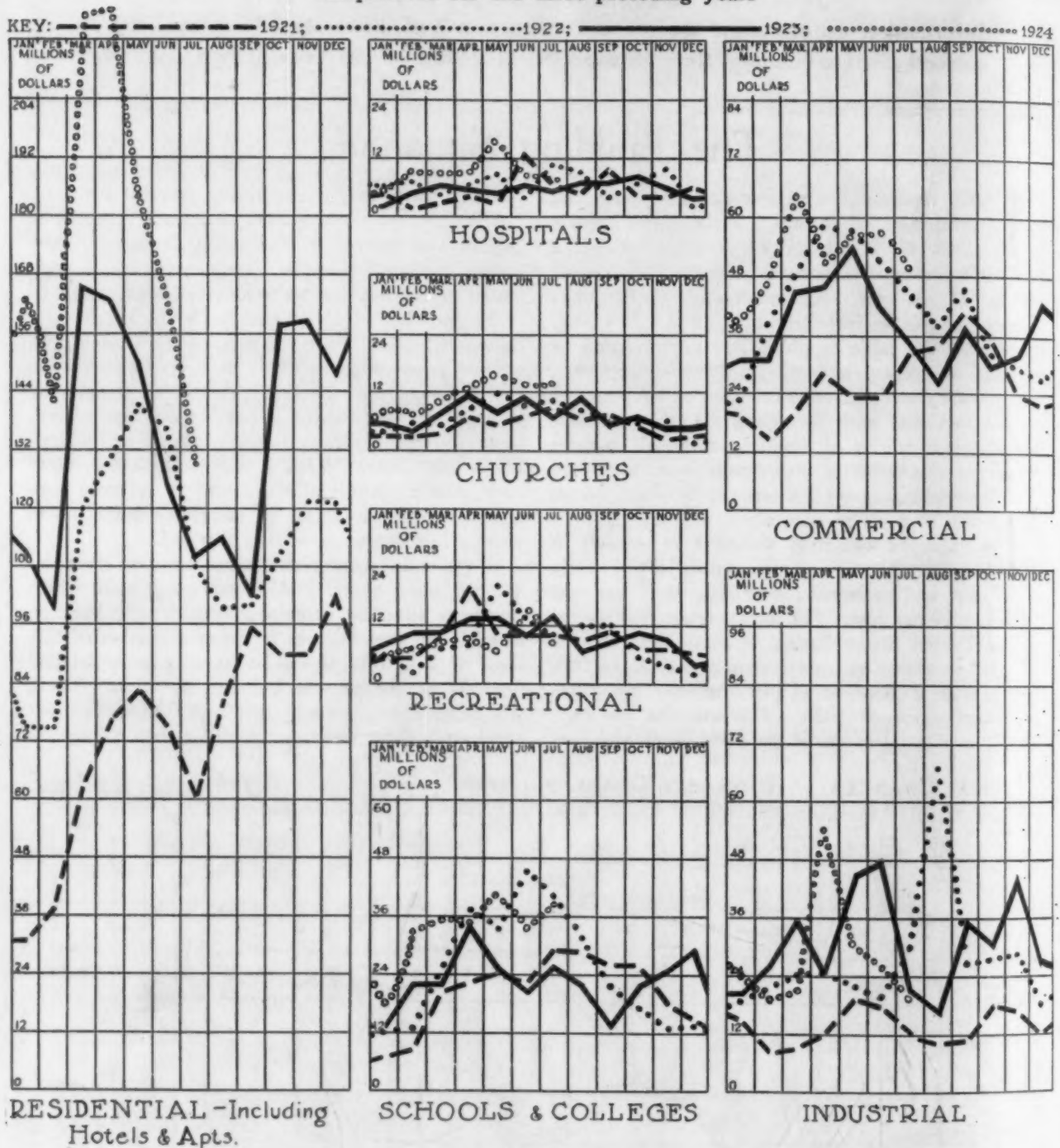
In general, business conditions seem to have developed on a sound and encouraging basis which creates a situation promising considerable building activity. In the Business & Finance Section of this issue of THE FORUM will be found a more detailed analysis of the present building situation. There will be given reasons why it is logical to believe that architects' offices will soon be busier than at present.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs*. This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index*. Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction*. Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record*. (4) *Money Value of New Construction*. Total valuation of all contracts actually let. The dollar scale is at the right of the chart in millions. (5) *Square Foot Area of New Construction*. The measured volume of new buildings. The square foot measure is at the left of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined first, by the trend of building costs, and second, by the quality of construction.

Monthly Analysis of the Trend of Building Activity

A study of the value of contracts let each month in seven important types of buildings—with graphic comparisons for the three preceding years



JULY 1924 CONTRACTS

IN order that a comparison of monthly activity may be made at a glance, the value of contracts let is presented in the above graphic charts. This information is based on data obtained through the United States Chamber of Commerce and the F. W. Dodge Corporation. The activity of each year is shown by a special line according to the key indicated at the top of the page. Thus, on each chart the activity in the form of Money Value of Con-

tracts Let may be followed through from January, 1921, to the most recent month for which figures were available when this page was printed. Not only is a rapid comparison provided of the total activity each year, but the relative activity for each month can be estimated by referring to the index figures representing millions of dollars as shown at the left of each chart. Reports cover about three-quarters of the total building in the United States.

BUILDING MATERIAL PRICES

Table Showing Average Prices Paid by Contractors for Building Materials at Local Distributing Points as of August 1, 1924. Prepared by Division of Building and Housing of the Bureau of Standards from Prices Secured through the Bureau of Census

| Commodities | Size or Condition | Unit | Fitchburg | Haverhill | New London | Pitts- burgh | Erie | Scranton | Balti- more | Washing- ton | Rich- mond | Fair- mont | Colum- bia | Savannah | De- troit | Saginaw | Bay City | Shreve- port | Grand Forks | St. Louis |
|------------------------------|-------------------------|---------------|-----------|-----------|------------|-----------------|-------|----------|----------------|-----------------|---------------|---------------|---------------|----------|--------------|---------|-------------|-----------------|----------------|-----------|
| Common Brick | Excl. of containers | 1,000 Bbl. | 22.00 | 25.00 | 27.00 | 17.00 | ... | 26.00 | 20.00 | ... | 17.00 | 24.00 | 12.00 | 15.50 | 17.50 | 13.00 | 18.00 | 16.00 | 15.00 | ... |
| Portland Cement | Dimension 2x4-16' | SIS1E | 2.67 | 3.20 | 3.43 | 2.85 | 3.40 | 3.00 | 3.00 | 2.70 | 3.20 | 2.75 | 3.50 | 3.00 | 2.95 | 2.35 | 2.50 | 3.40 | 3.40 | 2.80 |
| Yellow Pine No. 1 | Dimension 2x4-16' | SIS1E | ... | ... | ... | 49.00 | 49.00 | ... | 37.50 | ... | 32.00 | ... | ... | ... | 43.00 | 45.00 | 40.00 | 48.00 | 42.00 | 43.00 |
| Douglas Fir No. 1 | Dimension 2x4-16' | SIS1E | ... | ... | ... | ... | 50.00 | ... | ... | ... | 32.00 | 51.00 | 25.00 | ... | 43.00 | 45.00 | 40.00 | ... | ... | 43.00 |
| N. Carolina Pine No. 1 | Dimension 2x4-16' | SIS1E | ... | ... | ... | ... | 50.00 | ... | ... | ... | 35.00 | 50.00 | 25.00 | 30.00 | 43.00 | 40.00 | 53.00 | 40.00 | 45.00 | ... |
| Common Boards No. 1 | 1x6 | M | 100.00 | 110.00 | 105.00 | ... | ... | 38.00 | 38.00 | 110.00 | 100.00 | ... | 90.00 | ... | ... | 80.00 | 80.00 | 100.00 | 76.50 | 80.00 |
| Y.P. Flooring Edge Grain "C" | 1x4-10'-16' | M | ... | ... | ... | ... | 6.50 | ... | 10.40 | ... | 6.20 | 7.25 | ... | ... | ... | ... | 6.00 | 6.30 | 5.40 | 4.80 |
| Douglas Fir V. G. No. 2 | 1x4-10'-16' | M | 6.25 | 6.20 | 6.00 | 6.75 | 6.50 | ... | ... | ... | 5.48 | 6.75 | 7.25 | 6.25 | ... | 6.00 | 6.25 | 7.20 | ... | ... |
| Red Cedar Shingles | Extra clear 16" 5 to 2 | 100 sq. ft. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Cypress Shingles | Extra clear 16" 5 to 2 | 100 sq. ft. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Composition Shingles | Crushed slate surfaced. | 100 sq. ft. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gypsum Plaster Board | Hyd. | 100 sq. ft. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Line | ... | 1,000 sq. ft. | 25.00 | 45.00 | 50.00 | 37.50 | 45.00 | 32.50 | 45.00 | 30.00 | 37.50 | 40.00 | 20.00 | 55.00 | 30.00 | 38.00 | 35.00 | 23.00 | 32.00 | ... |
| Building Sand | ... | Ton | 1.80 | 2.00 | 2.60 | 2.50 | 2.50 | 2.20 | 1.70 | ... | 1.40 | 3.70 | 1.25 | 2.00 | 2.00 | 17.00 | 18.00 | 24.00 | 23.00 | 24.00 |
| Crushed Stone | ... | Cu. yd. | 3.25 | 2.50 | 1.65 | ... | 3.50 | ... | ... | ... | 2.35 | 2.75 | ... | ... | 2.75 | 2.35 | 2.50 | 2.25 | 2.70 | 2.70 |
| Wire Nails | ... | Ton | 4.05 | 4.40 | 4.75 | 3.40 | ... | ... | ... | ... | 3.75 | 4.10 | 4.25 | 3.60 | 3.55 | 3.75 | 3.60 | 3.90 | 5.50 | 5.00 |
| Window Glass | Single A 10"x12" | Keg | 4.00 | 4.15 | 4.27 | 5.95 | ... | 3.90 | ... | 5.80 | 4.40 | ... | 4.25 | 3.60 | 3.55 | 3.75 | 3.60 | 3.90 | 5.50 | 5.00 |
| Hollow Tile | 8"x12"x12" | Each | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Cast Iron Soil Pipe | 4" E.H. 13 lbs. per ft. | Ton | 69.21 | ... | ... | ... | 21 | 25 | 20 | ... | 24 | ... | 17 | ... | 20 | 21 | 15 | ... | ... | ... |
| Steel Pipe | 1" galv. | Ton | ... | ... | ... | ... | ... | 55.40 | ... | 64.90 | 86.00 | ... | ... | ... | ... | 60.00 | 82.00 | 84.59 | 112.00 | ... |
| Reinforcement Bars | 1" square | 100 lbs | ... | ... | ... | ... | ... | 9.88 | ... | 10.00 | 10.50 | 11.68 | ... | ... | ... | ... | 10.50 | 11.77 | ... | ... |
| Structural Steel | Fab. 6" I-beams | 100 lbs | 3.16 | 3.86 | ... | ... | ... | 3.30 | 3.25 | ... | 3.00 | 3.60 | 4.25 | ... | ... | 3.75 | 3.25 | 4.00 | 6.00 | ... |
| White Lead | Dry | 100 lbs | 6.50 | 5.50 | ... | ... | ... | 3.37 | ... | 4.00 | 4.80 | 4.75 | ... | ... | ... | 5.50 | 5.00 | 6.00 | 6.00 | ... |
| Dry | ... | 100 lbs | 13.78 | 15.00 | ... | ... | ... | 13.20 | ... | 14.75 | 12.50 | 15.25 | 15.00 | ... | ... | 14.50 | 14.00 | 15.25 | 17.00 | 14.75 |

THE FORUM CONSULTATION COMMITTEE

A group of nationally known experts on various technical subjects allied to building, providing a direct service to architects

THE editors of THE ARCHITECTURAL FORUM have been fortunate in obtaining the coöperation of the following recognized experts who constitute THE FORUM Consultation Committee. This Committee provides a service of the greatest value to subscribers in addition to the usual editorial service, and architects who seek information on specific questions in these various fields are invited to present inquiries regarding any of these subjects.

The basis on which this Committee has been organized is:

- (a) That each committee member shall be a representative leader in his line;
- (b) That no committee member has affiliations with any manufacturer;
- (c) That no committee member will be called upon for detailed service excepting by special arrangement;
- (d) That a special editorial article on a subject represented under each of the headings below shall be prepared during the year by the committee member.

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DANIEL P. RITCHEY

Known in the hotel field as the "hotel doctor," Mr. Ritchey, who is an engineer as well as an experienced hotel owner and manager, is qualified to answer any questions which may arise in this connection.

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Consulting, Heating and Ventilating Engineer

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J. CLYDESDALE CUSHMAN

President, Cushman & Wakefield, Inc., Real Estate, New York

Mr. Cushman's firm has participated largely in the promotion and operation of many large New York buildings. His own specialty is the management of office buildings.

GAS SERVICE AND UTILIZATION

NILS T. SELLMAN

Service Engineer, American Gas Association

A specialist in problems pertaining to gas service and its use in all classes of buildings and industries.

Address inquiries to committee members, care THE ARCHITECTURAL FORUM, 383 Madison Avenue, New York

THE FORUM DIGEST

A SURVEY OF IMPORTANT CURRENT ARTICLES ON BUILDING ECONOMICS AND BUSINESS CONDITIONS AFFECTING CONSTRUCTION

The Editors of this Department select from a wide range of publications matter of definite interest to Architects which would otherwise be available only through laborious effort

IS ALUMINATE CEMENT THE COMING MATERIAL?

As Developed in Europe It Has Exceptional Advantages—It is Quick to Harden, Impervious to Chemical Action and Unaffected by Low Temperatures—Saving in Forms Compensates for Higher Cost

ALUMINATE cement has two exceptional qualities that differentiate it sharply from all other hydraulic binders," says Henry S. Sprackman in the *Contract Record and Engineering Review*. "These are the rapidity with which it attains maximum strength and its resistance to chemical attack by sea water and waters containing sulphate of the alkaline earths in solution. We all consider first the remarkably high strengths of aluminate cement at short-time periods, that is, at 24 hours, 3 days and 7 days. In this development of high strength at early periods, aluminate cement is as superior to Portland cement as Portland cement is to natural cement, or natural cement is, in turn, to lime. Aluminate cement concrete mixed one cement, two sand, four stone or gravel, will give at 24 hours a resistance to compressive stress of 2,000 pounds per square foot; at 3 days, 5,000 pounds per square foot; at 7 days, 6,000 pounds. I am not referring now to strengths developed in laboratory tests, but to the strengths you can safely count on getting in the work using average aggregate and workmanship.

"What does such early strength mean to the worker in concrete? It means that a concrete road can be opened to traffic 48 hours after pouring. For example, at Le Teil, France, a section of concrete road poured between 8 p. m. Saturday and midnight was opened to traffic early Monday morning, and carried a 5-ton tractor hauling heavy loads without marking the concrete. At Lausanne, Switzerland, a bridge was opened to traffic 48 hours after the concrete was poured. A 12-ton tractor passed over the bridge the first day without the slightest injury. These early strengths also mean that in reinforced concrete work you can pour a story one day and use the forms again 3 days after. This was done in

the construction of a roundhouse for locomotives at Bethune, France, for the Railroad Company of the North. L. Peulabeuf, the contractor, used aluminate cements. The design called for the construction of 150 concrete chimnies, each 23 feet high, and weighing 4,500 pounds, carried by a reinforced concrete roof and girders which had a 20-foot span. The forms for both roof and chimnies were removed 48 hours after pouring. Using Portland cement, the forms and supports had to remain in place 20 days. It is proper, however, to say that French Portland cements are slower to harden than American.

"In reporting the use of aluminate cement for the construction of a reinforced concrete building at Chateau Roux, Indre, France, M. Blanchett said that the forms were removed in 48 hours from the beams and 3 days from the girders, and that a saving of two-thirds of the form lumber that would have been required for doing the work with Portland cement was made.

For Rapid Alteration Work

"Aluminate cement also makes possible the use of reinforced concrete in the structural alterations of occupied buildings. In such work, aluminate cement can be used with the same facility as structural steel. Perret Freres, of Paris, were entrusted by the Bank La Societe Marseillaise de Credit with the alteration of a five-story building on Rue Auber, Paris. It was proposed to substitute for a maze of small rooms and passages on the ground and second floors, the large reception halls and offices of a modern bank. In visualizing the problem, you must realize that the partitions were all masonry, extending up from the cellar and carrying the superimposed load of the three upper floors. To make the task more difficult, it was stipulated that the work must be carried on without interrupting the labor of the office force working in these two stories, and without inconvenience to the tenants who occupied the three upper floors. Structural steel columns and girders could not be used because it would have been impossible to get them into the building and put them into place without interfering with the occupancy of the two lower floors. Reinforced Portland cement

concrete could not be used because it would have necessitated the leaving of the forms and supports in place for several weeks in the office space required for the employees. Recourse was had to aluminate cement, which met the requirements of this difficult situation in every particular. Forms were removed in 48 hours, and, by reason of its greater strength, a considerable reduction was made in the area of columns and depth of girders.

"Actual use in winter work has shown that the hardening of aluminate cement is less affected by low temperatures than is the hardening of Portland cement concrete. The French claim that, provided the concrete is kept from freezing when it is being put into the forms and for two or three hours after, the development of strength will not be retarded by cold.

"Whether this would be true in the severe cold of our northern winter is doubtful to me, but the ability to harden at lower temperatures than Portland is a great advantage for late fall and early spring work, as it will obviate the annoying condition that most workers in concrete have met with from time to time by having concrete, though unfrozen, lying inert in the forms for days because of the low temperature of the concrete, even though the temperature of the air is quite high.

"The manufacturers of concrete products find the rapid hardening of aluminate cement concrete of great advantage. It reduces the number of moulds required, does away with expensive storage sheds for curing the product, and the tying up of capital in products under process of hardening. The concrete products can be shipped 24 hours after casting. It also permits manufacture in the field, and the almost immediate putting into use of such products as water pipe, reinforced piles, poles for support of electric wires, etc. Reinforced concrete piles can be driven 3 days after casting, and water pipe put under heavy pressure in 48 hours.

Relative Costs

"It will probably be interesting to you at this point for me to discuss the relative difference in cost between aluminate and Portland cement concretes. According to the best information I can obtain, aluminate ce-

ment in France sells at the mills for between two and a half and three times the price of Portland cement. This means, allowing on the average \$1 per barrel for handling, that is, railroad freights, hauling, etc., that aluminate cements cost delivered on the work from two to two and a half times as much as Portland cement. For example, if Portland cement cost \$2 f.o.b. mill, and aluminate cement \$6, with the addition of a handling cost of \$1, the cost delivered on the job will be \$3 for Portland cement and \$7 for aluminate cement, which is two and one-third times the cost of Portland. At first thought, such a difference may seem prohibitive, except in special cases where the time element or resistance to chemical attack makes the question of cost negligible. Such, however, has not proved to be the case in France. The best evidence of this is that it is today impossible to buy aluminate cement anywhere in Europe for immediate delivery. All the mills manufacturing aluminate cement are oversold. It is more difficult to obtain exact cost data than information regarding the behavior on the work. Therefore, I can quote only general statements, though doubtless they are entirely representative.

"Mr. Blanchett writes: 'One soon sees, without mentioning the quickness of the process, that the economy realized in the forms makes up and more for the higher price of aluminate cement.'

"Mr. Louis Peulabeuf writes: 'I believe that aluminate cement will be the cement for the future for reinforced concrete work, when its price will permit one to employ it in a more general fashion. Nevertheless, for the present, in spite of its high price, if one takes into account the economy in forms that it permits one to make, there will be found a large compensation for its cost.'

"Edwin C. Eckel, who made a study of the aluminate cement industry in France during the past summer, writes in *Concrete* of December, 1923: 'The apparent disadvantage, its necessarily high cost per barrel, is only apparent, for aluminate cement whatever its cost per barrel makes a cubic yard of concrete harden in place at a lower cost than any other cement, owing to the economies possible in proportions, labor, forms and time.'

"Following the same line of thought as Eckel, Prof. Paris, of Lausanne, has made a series of calculations which show that at current prices in Switzerland, the cost per 100 pounds per square inch resistance at 28 days in concrete is less for aluminate cements than for Portland. At shorter periods, 3 days, for example, the cost of 100 pounds per square inch of resistance to compression with aluminate cement is one-third that used with Portland.

No Longer Experimental

"Aluminate cement is no longer regarded as new or experimental in France. It is considered competitive with Portland in much work, and, in addition, has a recognized though constantly expanding field of its own, in which the specification of aluminate cements for work is considered almost mandatory. They are used in the largest work; for example, the tunnel at Brauss required some 75,000 barrels, and practically all the cement work used in Paris for street work is now aluminate cement.

"Aluminate cement, however, has a quality even more valuable than the development of high strength at early periods, that is resistance to chemical attack of waters carrying sulphate salts in solution. Extended laboratory research and results of use have proved beyond question of doubt that Portland cement is not stable in sea water; yet many Portland cement concrete structures exposed to the action of sea water have been and are giving good service. This resistance to the destructive action of sea water is not due to any particular virtue of the cement used but to the protective action of the aggregate which prevents the sea water from coming in contact with the cement. Any Portland cement concrete, exposed to sea water, sufficiently porous to allow the sea water to penetrate it, will inevitably be destroyed by chemical action, and what is true of sea water is equally true of ground water impregnated with sulphate salts of the alkaline earths. Therefore, the importance of resistance to chemical attack is not confined solely to marine structures. Indeed, the ground water of many of our large cities is contaminated by sulphur. I have known the sulphur content of the ground water to prevent concrete from hardening in deep foundations for two or three weeks. What the ultimate effect of this sulphur on the durability of the foundation will be is not difficult to predict.

"In Europe, owing to the character of their coasts, there is much port and harbor work which requires a greater use of concrete in sea water than is common with us. For this reason, the failure of cement in sea water has been given more careful study than with us. As early as 1853, on account of the numerous reports of the deterioration of marine structures, the French Society for the Encouragement of National Industry offered a reward for the best study on the cause of failure of cement in marine work, and for the past 75 years European engineers, chemists, and cement manufacturers have been seeking to find a cement that would be indecomposable in sea water, and it was the continued search for such a cement that led ultimately to the development of the aluminate cement industry in France.

Certain Other Advantages

"Other advantages, not so immediately obvious as high strength at early periods and resistance to the attack of sea water, are claimed for aluminate cement. It is said that the concretes made from aluminate cement are more elastic and have higher tensile strength than those made from Portland. These characteristics, combined with the high resistance to compressive stress, make possible a marked reduction both in the area of reinforced concrete members and in the amount of reinforcing still required. Now, on one piece of work, a tobacco manufactory and plant involving the use of about 150 yards of reinforced concrete, a saving was made through reduction in area of 14 per cent of the amount of aggregate and cement required, and of 7 per cent in the amount of reinforcing steel. The design and calculation for the reinforced concrete work on this job were made by Mr. Guillaume, the consulting engineer of the Societe Central de Travaux Public. Such a reduction in area more than compensates for the extra cost of the cement, and leaves the indirect gain, such as saving in time, amount of form lumber, etc., clear profit.

"The second of these advantages is that the hardening of aluminate cement concrete is not materially affected by low temperature. The third is that, with any given fine aggregate, aluminate cement used in the same proportions will give a denser, more permeable and less absorbent mortar than Portland cement. This is an important factor in connection with resistance to the physical attack of sea water on concrete structures.

"Aluminate cement mortars are more plastic than Portland cement, and do not shrink in setting. These characteristics, combined with quick hardening and impermeability, make aluminate cement particularly adapted for outside plaster."

HOLLOW BUILDING TILE

THE increasing tendency on the part of manufacturers of building materials to secure the advantages obtainable through the application of the principles of simplified practice to their individual commodities was, in a large measure, responsible for the hollow building tile group meeting with distributors and users of this material for the purpose of recommending a simplified line of sizes and weights of hollow building tile.

The cooperative services of the division of simplified practice available to all American industries in the elimination of waste were requested by the manufacturers of the commodity at a preliminary conference held at the Department of Commerce on June 19, 1923. Data supplied in response to a survey conducted by the standards committee of the Hollow Build-

ing Tile Association, disclosed the usual variations in sizes and weights of tile, as generally exist in commodities of allied industries.

Thirty-six different sizes, each made in a wide variety of weights, showed the prevailing uneconomical policy in production, and the preliminary conference asked that a general conference be called with properly accredited representatives of the distributing and consuming groups.

It was understood that the last four units of tile as listed under "Standard Partition Tile" should remain in this classification until a course of tests now in progress at the Bureau of Standards should determine whether they would be classed as floor tile of standard weights.

The conference offered the recommendation to become effective January 1, 1924, and be subject to revision one year from that date, the simplification thus to be kept abreast of advances in practice, while it progressively eliminates the waste of needless or obsolescent varieties.

In accordance with the unanimous action of this joint conference of representatives of manufacturers, distributors, and users, the United States Department of Commerce, through the Bureau of Standards, recommends that the number of sizes of hollow building tile be reduced to those given in the tables included here.

STANDARD LOAD-BEARING WALL TILE

| | Number of cells | Weight, each (Pounds) |
|---------------------------------|-----------------|-----------------------|
| End Construction: | | |
| 3½ by 12 by 12..... | 3 | 20 |
| 6 by 12 by 12..... | 6 | 30 |
| 8 by 12 by 12..... | 6 | 36 |
| 10 by 12 by 12..... | 6 | 42 |
| 12 by 12 by 12..... | 6 | 48 |
| Side Construction: | | |
| 3½ by 5 by 12..... | 1 | 9 |
| 8 by 5 by 12..... | 2 | 16 |
| 8 by 5 by 12 ("L" shaped).... | .. | 16 |
| 8 by 6½ by 12 ("T" shaped).... | 4 | 16 |
| 8 by 7¾ by 12 (square)..... | 6 | 24 |
| 8 by 10¼ by 12 ("H" shaped).... | 7 | 32 |

STANDARD PARTITION TILE

| | Number of cells | Weight, each (Pounds) |
|---------------------|-----------------|-----------------------|
| 3 by 12 by 12..... | 3 | 15 |
| 4 by 12 by 12..... | 3 | 16 |
| 6 by 12 by 12..... | 3 | 22 |
| 8 by 12 by 12..... | 4 | 30 |
| 10 by 12 by 12..... | 4 | 36 |
| 12 by 12 by 12..... | 4 | 40 |

STANDARD SPLIT FURRING TILE

| | Number of cells | Weight, each (Pounds) |
|--------------------|-----------------|-----------------------|
| 2 by 12 by 12..... | .. | 9 |

STANDARD BOOK TILE

| | Pounds per square foot |
|--------------------------|------------------------|
| 3 by 12 by 18 to 24..... | 18 |

Not more than 5 per cent tolerance over or under allowable for weights, and 3 per cent over or under for dimensions covering length, width and height.

AN AMERICAN ALUMINA CEMENT

AFTER some nine months of experimentation," according to the *Engineering News-Record*, "which involved a thorough study of manufacturing processes as well as such physical tests as were possible in that period, an allied company of

the Atlas Portland Cement Co. has put on the market an American alumina cement. Ever since the war there has been growing interest in this quick-setting, high strength hydraulic cement, which proved so effective in the emergency work at the battle front and which the French seem to be demanding faster than the manufacturers can supply it. Up to now, however, American engineers could learn about it only through reports of tests on the French product, and through some limited tests on some similar cements manufactured in test quantities only by the Bureau of Standards here.

"These reports show the material to have remarkable possibilities for some special types of work. Concrete made from it, for instance, in the ordinary proportions gives test strengths in 24 hours equal to or greater than that of Portland cement concrete in 28 days. It is not a flash cement; for the first few hours its process of setting is quite comparable to Portland, but some time between 4 and 12 hours its strength shoots straight up. For emergency work, such as street repairs, rail cross-overs, oil well linings, concrete floor finish, grouting, etc., this is a tremendous advantage, and the possibilities of use in concrete piles or even in bridges and buildings where form re-use is important are obvious. Then, too, claims for a superior resistance to saline attack were made for this alumina cement, and although these claims are not as readily proved or as easily studied as those regarding strength and setting speed, they draw attention to the new cement as a desirable material.

"All of these claims, however, American engineers have hitherto had to take mainly on faith, for as has been said, the French product was practically unobtainable. Now anyone who wishes can test out the cement for himself. The manufacturer is continuing his own tests, which will be made public when they have acquired sufficient body, but he is enough impressed with them to undertake commercial production of the cement. Many engineers will want to take advantage of this opportunity to test out for themselves the utility of the new product. The cost of the new cement is above twice as much—bulk for bulk—as for ordinary Portland, and except for its early high strength, the possibly higher resistance to salts, and a darker color, it has the same qualities as a Portland. Indeed, but for a slightly higher insoluble residue, the new American alumina cement will pass the standard Portland specification.

"There is no danger that alumina cement will supersede Portland—whatever its qualities—because for its manufacture it requires a high alumina ore, like bauxite, which is of rare and concentrated occurrence.

The price must therefore probably always be high—too high perhaps to compete with the readily made Portland. But the peculiar advantages of the alumina cement make it a most interesting possibility."

CODE OF LIGHTING SCHOOL BUILDINGS ADOPTED

WITH the approval of the Code of Lighting School Buildings as an American Standard by the American Engineering Standards Committee, a demand for definite, detailed and up-to-date specifications for lighting school buildings on the part of the architects of school buildings, school superintendents and school boards and regulatory bodies has been met. The present code is the result of a thorough revision of the code prepared and issued in 1918 by the Illuminating Engineering Society. A number of changes and improvements in lighting practice itself, made since the 1918 code was issued, have made necessary its revision to conform to the best modern practice.

Considerable interest was manifested in the original code, as is evidenced by the fact that it was adopted shortly after its publication by the New York State Department of Education as a guide in planning the artificial lighting of school buildings in that state. The Industrial Commission of Wisconsin used it as a basis for the preparation of the Wisconsin School Lighting Code, effective in 1921. Provisions of the code have been incorporated in building codes in several states and municipalities.

The new code differs from the old chiefly in being more specific. Illumination standards have been raised to conform to modern practice; specifications of definite requirements under the glare rule have been included; a limiting ratio of maximum intensity to minimum intensity in classrooms has been included in the rule relating to distribution of artificial light; reflection factors have been specified in the rule relating to color and finish of interiors; the rule relating to exit and emergency lighting has been amplified, and a rule relating to the illumination of blackboards has been added.

The rules themselves are clear and concise, occupying less than four pages. They are followed by a non-technical discussion of the importance of compliance with them and by directions for carrying them out. These are accompanied by simple diagrams.

The present code was developed and adopted by unanimous action of a large and representative sectional committee made up of official representatives of the technical, educational and industrial organizations concerned, acting under the leadership of the Illuminating Engineering Society, and the American Institute of Architects. Further information can be obtained from the American Engineering Standards Committee, 29 West 39th Street, New York.

SPECIFICATIONS FOR GLAZING GLASS

INFORMATION which is expected to prove of value to the purchaser of glazing glass in obtaining the quality of glass he pays for is contained in a set of U. S. Government specifications recently issued by the Bureau of Standards, Department of Commerce. A classification of such glasses is given, together with complete data regarding the sizes and thicknesses of glass obtainable. A method of examining glass is given which enables one to identify the grades commonly marketed.

Perfect glass, the Bureau says, is practically never made, but many defects can be present without destroying the utility or the good appearance of the window, provided the glass is properly selected so that slight imperfections are unnoticeable. Glazing glass of various qualities is selected from this point of view.

In the preparation of these specifications assistance and advice were secured from manufacturers and distributors of glass, and from representatives of the American Institute of Architects, the Federal Supervising Architect's office, and from sash and door manufacturers' associations. The information so gathered is expected to prove useful to consumers and helpful in protecting the honest manufacturer and dealer against those who misrepresent the quality of the glass they are selling.

These specifications are contained in Circular No. 164 of the Bureau of Standards. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington. The price is 5 cents.

OUTLOOK GOOD FOR REST OF YEAR

THE passing of Labor Day marks the beginning of a new construction period, and it is therefore advisable to look into the future of the industry for the remaining four months of the year. The summer months usually show a slight let-down in the industry, but September 1 invariably brings a resumption of activities. Conditions are more stable now than they have been any time this year. No marked wage fluctuations either upward or downward are in sight. The material market is sailing on an even keel, and there is every reason to believe that there will not be much deviation from present prices during the rest of the year. Many investors have been waiting for assurance that building costs have been stabilized, and undoubtedly the next few weeks will bring out a large number of projects which were held up during the early part of the season. Conditions in other lines are rapidly improving. The American farmer is in a better position today than for some time past. It is esti-

imated that the value of crops this year exceeds that of last year by \$700,000,000. "Four lines of manufacturing, namely, iron and steel, motors, textile, and leather," says the *National Bulletin of the Association of Building Trades Employers*, "are rapidly returning to normal conditions. Money is plentiful, and interest rates are low. Taking all these various phases into consideration, it becomes evident that for the remainder of 1924, at least, conditions in construction will be good."

SIMPLIFICATION OF MATERIAL

THE Division of Simplified Practice of the U. S. Department of Commerce has rendered a valuable service to the construction industry through the simplification and standardization of building materials. Among the items already standardized are these:

| Item | Reduction in Varieties |
|------------------------|------------------------|
| Metal lath | 125 to 24 |
| Hollow building tile.. | 36 to 19 |
| Face brick | 39 to 1 |
| Blackboard slate | 90 to 3 |
| Hot water tanks | 120 to 14 |

DEFINITION OF BRICK

AT the instigation of the Common Brick Manufacturers' Association of America, the National Vigilance Committee, which is a department of the Associated Advertising Clubs of the World, issued a bulletin in which it defines the word brick "as a solid burned clay product of dimensions approximating $2\frac{3}{4} \times 3\frac{3}{4} \times 8$ inches." In commenting on the bulletin issued by the Vigilance Committee, the weekly news letter of the Common Brick Manufacturers' Association says, "The bulletin will establish with publications throughout the country the principle that no commodity should be advertised as brick, using the word alone, unless it is made of burned clay, and that all advertising for substitutes should clearly set forth that the building unit is made of some other material."

This action will probably adjust one of the points of difference which have long vexed the business world.

BUILDERS STUDY EMPLOYMENT CONDITIONS IN MILWAUKEE

THE Master Builders Association of Wisconsin recently published a chart showing the percentage of time worked and the yearly earnings of the major building trades in Milwaukee, based on the 1924 rate. The chart shows that tile setters are employed more days per year than any other trade, their average being 90 per cent of the maximum number of working days. Structural iron workers and hoisting engineers are at the bottom of the list, being employed only 60 per cent of the time; carpenters, painters, plasterers, lathers, plumbers and electricians are employed 85 per cent; steam fitters, sheet metal workers and concrete finishers are employed 75 per cent; marble setters, slate roofers and composition roofers are employed 70 per cent; bricklayers 65 per cent and common laborers 80 per cent.

Based on the 1924 rate, the earnings of tile setters are higher than those of any other trade. The order of the rest of the trades is as follows: plasterers, second; lathers and plumbers, third; electricians, fourth; bricklayers, fifth; marble setters, sixth; carpenters, seventh; steam-fitters, eighth; painters, ninth; slate roofers, tenth; sheet metal workers, eleventh; cement finishers, twelfth; structural iron workers, thirteenth; composition roofers, fourteenth; hoisting engineers, fifteenth; laborers, sixteenth. These figures afford basis for study.

WHOLESALE PRICES OF PLUMBING FIXTURES

WHOLESALE prices of standard plumbing fixtures for a 6-room house have been collected by the Department of Commerce from reports of 12 representative manufacturers and wholesalers. The average price reported by these firms on six standard fixtures, net to retailer without freight, are given here for 1913 and for each month since May, 1923, together with an index number based on 1913 as 100, representing the relation of the aggregate price of the six fixtures to their 1913 prices.

| | Bath tubs | Wash-stands | Water closets | Sinks | Laundry tubs | Range boilers | Total | Index (relative 1913) |
|--------------------|-----------|-------------|---------------|---------|--------------|---------------|---------|-----------------------|
| 1913 average | \$16.49 | \$8.61 | \$15.69 | \$11.73 | \$8.13 | \$6.93 | \$67.58 | 100.0 |
| 1923 May | 31.21 | 15.88 | 31.35 | 22.01 | 15.89 | 13.00 | 129.34 | 191.4 |
| June | 31.16 | 16.06 | 31.34 | 22.39 | 15.92 | 13.34 | 130.21 | 192.7 |
| July | 31.18 | 16.07 | 30.78 | 22.45 | 15.91 | 13.19 | 129.58 | 191.8 |
| August | 30.99 | 16.06 | 30.57 | 22.23 | 15.11 | 13.07 | 128.03 | 189.5 |
| September | 31.23 | 16.10 | 29.91 | 23.00 | 14.73 | 13.11 | 128.08 | 189.6 |
| October | 30.99 | 16.06 | 28.28 | 23.08 | 14.82 | 13.38 | 126.61 | 187.4 |
| November | 30.72 | 15.58 | 27.37 | 22.94 | 14.61 | 13.31 | 124.53 | 184.3 |
| December | 30.80 | 15.62 | 27.02 | 22.64 | 14.51 | 13.31 | 124.38 | 184.1 |
| 1924 January | 30.62 | 15.55 | 26.53 | 23.21 | 14.32 | 13.35 | 123.58 | 182.9 |
| February | 30.57 | 15.46 | 26.53 | 23.22 | 14.40 | 13.59 | 123.77 | 183.2 |
| March | 30.55 | 15.51 | 26.36 | 23.36 | 14.18 | 13.69 | 123.65 | 183.0 |
| April | 30.42 | 15.53 | 26.40 | 23.26 | 13.83 | 13.82 | 123.26 | 182.4 |
| May | 30.24 | 15.41 | 26.12 | 23.12 | 13.11 | 13.70 | 121.70 | 180.1 |

Comparative Prices for Plumbing Fixtures in 1913 and 1924

SERVICE SECTION of THE ARCHITECTURAL FORUM

Information on economic aspects of construction and direct service for architects on subjects allied to building, through members of THE FORUM Consultation Committee

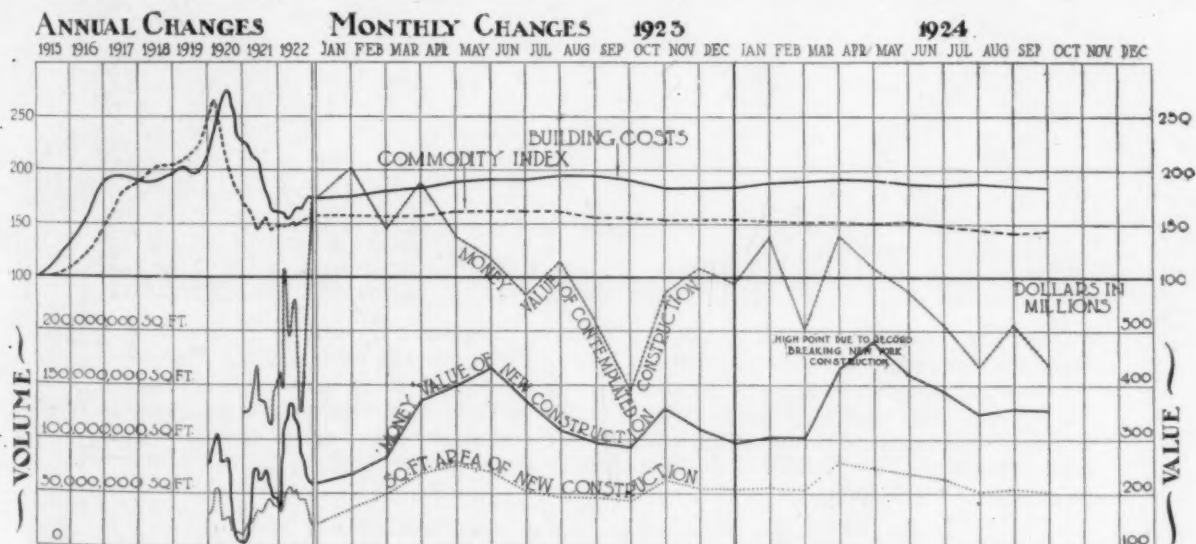
The Building Situation

THE records for September, which completes the first nine months of activity in 1924, indicate that this year has already passed the four billion dollar mark and that the total value of construction for the year will be over five billion dollars, as forecast in the January, 1924 issue of THE ARCHITECTURAL FORUM. Figures of the F. W. Dodge Corporation, which cover a large proportion of the country, show a total value of contracts awarded since January 1 of \$3,365,077,700, an increase of nearly 12 per cent over the figures for the corresponding nine months of 1923. The total of contracts let in September is 19 per cent higher than in the previous September. In examining the line "Money Value of New Construction," in the chart below, it will be seen that the decrease in totals of contracts in June, July, August and September was not as great in 1924 as in 1923, and it is expected that October and November will show higher totals than the previous months.

There has been a slight, steady decrease in the cost of building materials and in the cost of building, as indicated in the building cost line in this chart. It

is anticipated that there will be a heavy volume of winter construction, which will help stabilize demand and relieve the pressure when the active spring season begins to develop its usual heavy volume. The subject of winter building is now being studied more carefully than ever before.

The prospects for new building are good, the total value of construction for which plans were filed in September being nearly \$40,000,000 higher than in September, 1923. Architects are beginning to feel effects of an active revival of business in their offices, and each month is now showing an interesting quota of delayed projects being brought out for active consideration. It is to be noted that the general character of new buildings for which plans are being filed is better than for some time, and that much of the highly speculative residential construction is being replaced by better types of investment building. The outstanding construction activity is to be found in the Middle Atlantic States, where building is much more active than in other sections, but general reports promise increased activity soon in the West and on the Pacific Coast.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs.* This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index.* Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction.* Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record.* (4) *Money Value of New Construction.* Total valuation of all contracts actually let. The dollar scale is at the right of the chart in millions. (5) *Square Foot Area of New Construction.* The measured volume of new buildings. The square foot measure is at the left of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined first, by the trend of building costs, and second, by the quality of construction.

JOHNSON



Winter knows no ills or chills where The Johnson Pneumatic System of Temperature Regulation governs the temperature in the home. Each room is maintained at the correct and even degree, as required by the room's purpose and occupancy. The Johnson Thermostat turns on and off each radiator independently of the others in the house: and does so reliably, as the mercury in the wall thermometer goes beyond or below the point stipulated. The health of the household is guarded the white joys of Winter ne'er turn to black sorrow.

The foregoing applies with equal emphasis to the office building or business block about to be erected, in course of construction or already built.

JOHNSON SERVICE COMPANY, MILWAUKEE

AUTOMATIC TEMPERATURE REGULATION FOR 38 YEARS

TWENTY-EIGHT BRANCHES UNITED STATES AND CANADA



SERVICE SECTION of THE ARCHITECTURAL FORUM

Information on economic aspects of construction and direct service for architects on subjects allied to building, through members of THE FORUM Consultation Committee

The Building Situation

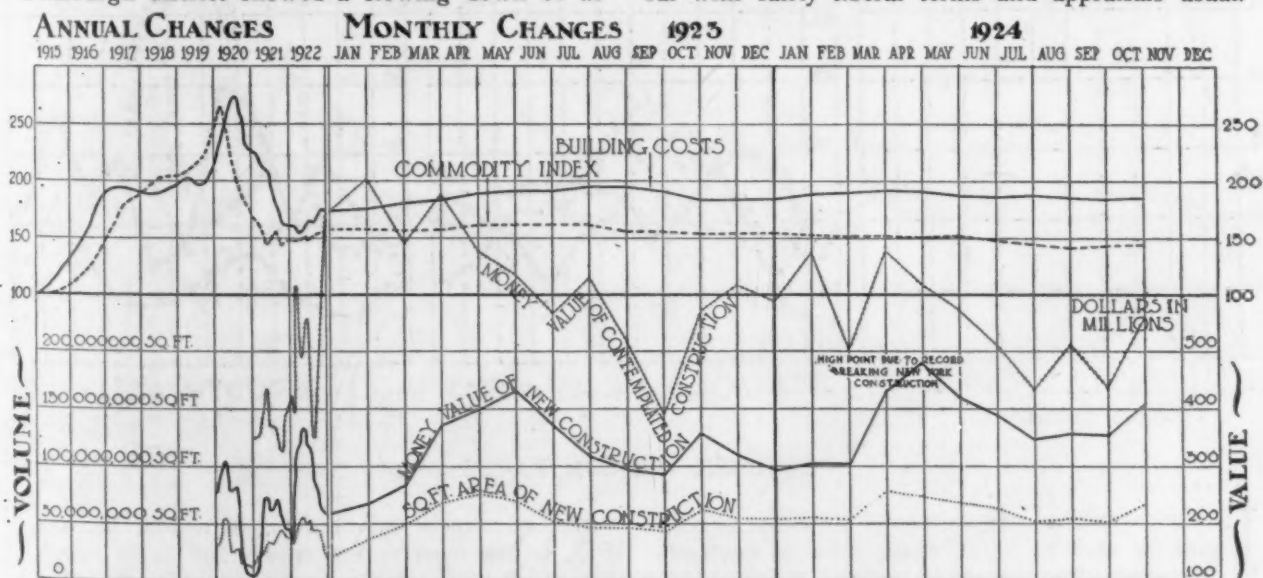
AS indicated in the chart below, the expected increase in October building activity has been shown by a total value of new building contracts during the month amounting to \$410,090,800. This is the F. W. Dodge Corporation's figure for territory representing practically seven-eighths of the country and records an increase of 14 per cent over October of last year and 19 per cent over the preceding month, September, 1924.

This increase occurred principally in New York and New Jersey, where there was an increase of 31 per cent over September and 1 per cent over October of last year. In New England new building was 3 per cent higher than September and equal to October, 1923. In the Middle Atlantic States, October showed a 22 per cent increase over September and a 77 per cent increase over October, 1923. Other increases included the Southeastern States, 41 per cent over September and 60 per cent over October, 1923; the Central West, 16 per cent over September and 12 per cent over the previous October, and the Northwest, 33 per cent over September, but 11 per cent under October, 1923. The Pittsburgh district showed a slowing down of ac-

tivity, being 12 per cent less than September and 18 per cent less than the previous October. It is quite evident by the nature of contracts let and plans filed that an unusual amount of winter construction is being undertaken. This trend toward the reduction of seasonal peaks is gratifying and will contribute strongly to the economic welfare of the country and of the building construction industry.

The charts on the next page show that residential building still contributes heavily to the grand total of building activity. This field includes not only dwellings but apartment buildings and hotels. Each month of this year has shown the highest total ever known for the same month in any recorded year, and yet rentals hold their high levels and the vast volume of new housing is quietly and quickly absorbed by the public. Commercial and industrial buildings are also again contributing an increased quota of new construction, while club and recreational building is unusually active.

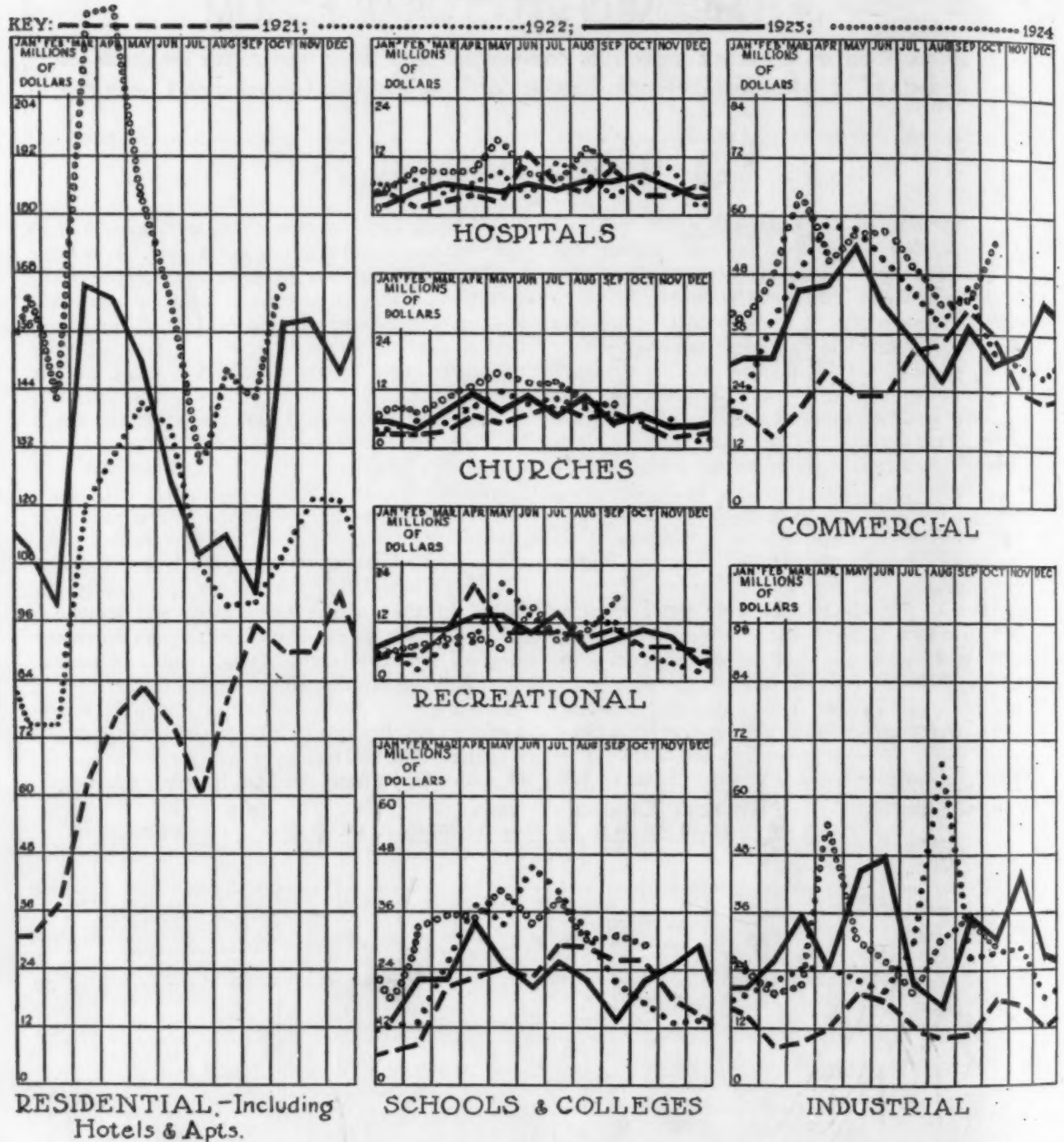
Building costs are stabilizing in a manner which is encouraging many new projects into early stages of construction, and mortgage money remains plentiful with fairly liberal terms and appraisals usual.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs*. This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index*. Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction*. Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record*. (4) *Money Value of New Construction*. Total valuation of all contracts actually let. The dollar scale is at the right of the chart in millions. (5) *Square Foot Area of New Construction*. The measured volume of new buildings. The square foot measure is at the left of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined first, by the trend of building costs, and second, by the quality of construction.

Monthly Analysis of the Trend of Building Activity

A study of the value of contracts let each month in seven important types of buildings—with graphic comparisons for the three preceding years



OCTOBER 1924 CONTRACTS

IN order that a comparison of monthly activity may be made at a glance, the value of contracts let is presented in the above graphic charts. This information is based on data obtained through the United States Chamber of Commerce and the F. W. Dodge Corporation. The activity of each year is shown by a special line according to the key indicated at the top of the page. Thus, on each chart the activity in the form of Money Value of Con-

tracts Let may be followed through from January, 1921, to the most recent month for which figures were available when this page was printed. Not only is a rapid comparison provided of the total activity each year, but the relative activity for each month can be estimated by referring to the index figures representing millions of dollars as shown at the left of each chart. Reports cover about three-quarters of the total building in the United States.

Table Showing Average Prices Paid by Contractors for Building Materials at Local Distributing Points as of October 1, 1924. Prepared by Division of Building and Housing of the Bureau of Standards from Prices Secured through the Bureau of Census

[illegible]

THE FORUM CONSULTATION COMMITTEE

A group of nationally known experts on various technical subjects allied to building, providing a direct service to architects

THE editors of THE ARCHITECTURAL FORUM have been fortunate in obtaining the coöperation of the following recognized experts who constitute THE FORUM Consultation Committee. This Committee provides a service of the greatest value to subscribers in addition to the usual editorial service, and architects who seek information on specific questions in these various fields are invited to present inquiries regarding any of these subjects.

The basis on which this Committee has been organized is:

- (a) That each committee member shall be a representative leader in his line;
- (b) That no committee member has affiliations with any manufacturer;
- (c) That no committee member will be called upon for detailed service excepting by special arrangement;
- (d) That a special editorial article on a subject represented under each of the headings below shall be prepared during the year by the committee member.

SUBJECTS AND COMMITTEE PERSONNEL

HOTEL DESIGN AND EQUIPMENT

DANIEL P. RITCHEY

Known in the hotel field as the "hotel doctor," Mr. Ritchey, who is an engineer as well as an experienced hotel owner and manager, is qualified to answer any questions which may arise in this connection.

HEATING AND VENTILATING

CHARLES A. FULLER

Consulting, Heating and Ventilating Engineer

Member of firm of Griggs & Myers, New York. Widely experienced in the field of heating and ventilating design for office, institutional and industrial buildings; specialist on investigation and report work on mechanical equipment for new and old plants.

ELECTRICAL SCIENCE

WILLIAM L. GOODWIN

Vice-president of the Society for Electrical Development

This Society is organized to promote accurate knowledge of the practical application of electricity. Its activities extend from the simple problems of household equipment to highly developed electrical plants. Particular attention is given the development of provision for electrical service in buildings.

SAFETY ENGINEERING

S. J. WILLIAMS

Secretary and Chief Engineer, National Safety Council, Chicago

Safety engineering is an important factor in the design of buildings where large groups of people congregate. The National Safety Council has investigated construction and devices with the greatest minuteness.

FINANCE

WALTER STABLER

Comptroller, Metropolitan Life Insurance Co.

The largest institution in the United States making loans for building construction. Mr. Stabler's knowledge of building investments covers the country and is widely recognized.

REAL ESTATE

C. STANLEY TAYLOR

Widely experienced in real estate development and financing, real property law, architecture, engineering and building construction. Financial and Business Editor of THE ARCHITECTURAL FORUM.

FIRE PROTECTION ENGINEERING

J. D. HUNTER

Chief Engineer, Marsh & McLennan, Insurance Brokers, New York

Specialist in insurance engineering as applied to building design, construction and equipment.

BUILDING MANAGEMENT

J. CLYDESDALE CUSHMAN

President, Cushman & Wakefield, Inc., Real Estate, New York

Mr. Cushman's firm has participated largely in the promotion and operation of many large New York buildings. His own specialty is the management of office buildings.

GAS SERVICE AND UTILIZATION

NILS T. SKILLMAN

Service Engineer, American Gas Association

A specialist in problems pertaining to gas service and its use in all classes of buildings and industries.



HOTEL CALIFORNIAN, Fresno, Cal.: R. F. Felchlin Co., Fresno, Architects;
Crane Co., San Francisco, Jobbers; Barrett-Hicks Co., Fresno, Plumbers

KOHLER

And the HOTEL CALIFORNIAN

KOHLER

This name, unobtrusively fused into the enamel of every Kohler fixture, is a guaranty of genuineness and of these distinctive Kohler qualities—(1) the beautiful snowy whiteness of the durable enamel; (2) the uniformity of that whiteness in every fixture.

It is no easy matter to keep pace with the swift development of California's great San Joaquin Valley.

Among other things; it requires hotels and more hotels; so the city of Fresno has responded handsomely by building the Hotel Californian.

The character of this fine hotel is indicated by the fact that Kohler "Viceroy" built-in baths were selected to equip its 160 bathrooms.

Kohler Ware's national reputation for more than ordinary quality seldom fails to receive careful consideration wherever the needs of a discriminating public must be served.

KOHLER OF KOHLER

Kohler Co., Founded 1873, Kohler, Wisconsin
Shipping Point, Sheboygan, Wisconsin

BRANCHES IN PRINCIPAL CITIES

MANUFACTURERS OF ENAMELED PLUMBING WARE AND KOHLER AUTOMATIC POWER AND LIGHT 110 VOLT D. C.

Manufacturers' Catalogs

INDIANA LIMESTONE QUARRYMEN'S ASSOCIATION,
Bedford, Ind. "Portfolio of Designs for Moderate Cost
Indiana Limestone Homes."

In this booklet there are presented a number of designs for houses of different architectural types which are successfully developed in stone, together with their floor plans and suggestions for placing such houses in different ways upon building plots of sizes likely to be available for building.

Stone is often thought to be something of a luxury and its use appropriate only for structures which are large and costly, but architects are now giving more attention than ever before to the use of stone in smaller, moderate-cost houses, and many interesting examples of the use of stone for such houses now exist. It is true, of course, that the initial cost of stone is greater than that of certain other building materials, but it might be remembered that upon the credit side of the account there are to be entered large items for the lack of upkeep cost, greater resistance to fire, etc., which will before long more than offset the greater expenditure at the beginning.

Publication of this volume, which contains designs for houses of distinctly moderate costs and sizes, marks a step forward in meeting the requirements of builders of smaller houses. The booklet will be sent gratis to any architect who requests it.

BONDED FLOORS CO., INC. (Division of Congoleum Co., Inc.), New York. "Hospital Floors." "Distinctive Floors." "Gold Seal Treadlite Floors."

During the past few years a great change has come to the treatment which is given the floors in offices, shops of certain kinds, restaurants, vestibules and other more or less public places. It is now realized that floors of wood are not always desirable and that floors of concrete or cement are often responsible for the fatigue which so frequently interferes with the work of those employed in such areas. Thus there have come into use flooring materials of different kinds which in addition to possessing desirable strictly utilitarian qualities are so beautiful that they would often be likely to win acceptance on the score of appearance alone.

"Hospital Floors" describes and illustrates floors in quite a number of hospitals, certain floors, particularly in large wards, being covered with Battle-ship Linoleum, while in other rooms such material is used in combination with borders of the same material in striking color combinations. Also for hospital use are suggested the Gold Seal Treadlite Tile which possess colorful beauty, are noise-deadening, and which wear indefinitely without requiring refinishing or repairs.

"Distinctive Floors" and "Gold Seal Treadlite Floors" deal with flooring for banks, restaurants, certain rooms of hotels, and elsewhere where a certain excellence of appearance is quite as necessary as good wearing qualities. The number of effective color combinations which the material affords is astonishing, and without being an imitation of

marble it affords many of the qualities which render marble desirable, along with the softness to the feet which is the chief underlying valuable quality of many of these materials.

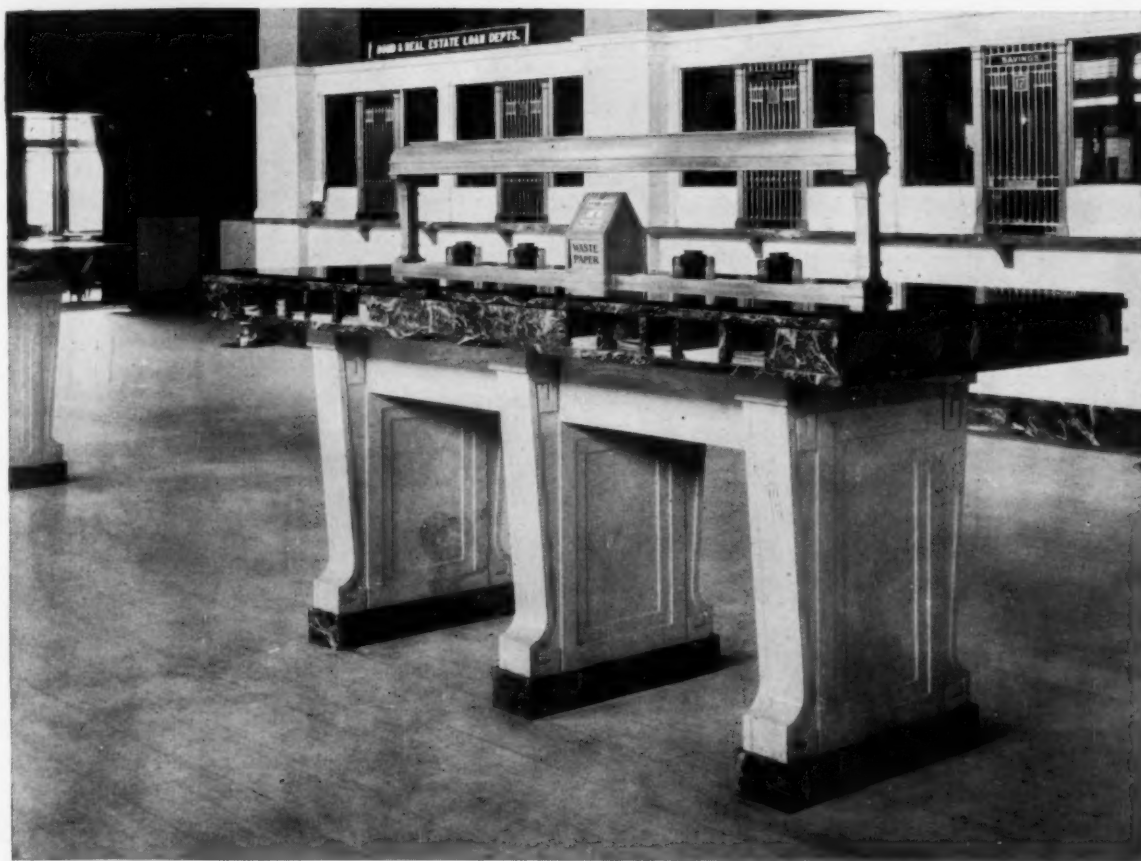
The company offers to the public the services of its designing department, and it is obvious that into work of this character the matter of design enters largely. The matter of color and the securing of rich and appropriate color combinations are in many an instance quite as important as selecting an effective design for the units of the different colors.

BRIDGEPORT BRASS COMPANY, Bridgeport, Connecticut. "Brass Pipes and Piping."

Fully warranted by its importance is the attention which careful architects and builders are giving to the choice of piping. Under any circumstances the subject would deserve consideration, but the growth of the practice of concealing pipes of all kinds within walls and floors, and the consequent impossibility of reaching the pipes without extensive tearing away of walls and ripping up of floors render it absolutely imperative that the matter be given attention at the proper time—when the structure is being planned by the architect.

All forms of metallic piping are subject to corrosion which will eventually cause failure. There are countless instances where the piping of a building has worn out long before the structure itself shows even the smallest tendency to decay, and with the absolute certainty of eventual failure of piping it is merely the part of wisdom to prolong its life as long as possible. Webster's Dictionary says that corrosion is "Action or effect of corroding, or of corrosive agents; the process of corrosive change. The word is now generally used of a gradual wearing away by a chemical process, as in the rusting of iron; but it formerly included erosion, which is a mechanical process." It is sometimes applied to chemical alteration not necessarily accompanied by loss of form or compactness, as in the change of lead into white lead." The process of corrosion may be hastened or retarded by the presence or absence in water of certain ingredients which affect the surfaces of metal piping, and with water used for so many purposes it has been found that (1) pipes of wrought iron or steel are best for heating systems, (2) cast iron for soil pipes, vents and underground service, and (3) brass for salt water piping, for hot water supply piping, and for cold water supply piping, at least where the lines are concealed.

While this well written and valuable brochure is devoted primarily to the brass piping made by this well known firm, it covers quite thoroughly the other forms of piping which good practice recommends for certain specific purposes. The manufacture of brass piping is described, all necessary data as to weights and sizes are given, and considerable information is included as to installations of various types in which it has been used during many years.



Clow Marble Table—Capital State Savings Bank, Chicago, Ill.

THE Clow marble mill is one of the oldest departments of the Clow business. In architectural beauty as well as skillful workmanship Clow marble work is unsurpassed.

This work includes not only fine ornamental work such as tables,

benches, etc., but wainscotings, partitions, and stalls, and showers, hydrotherapeutic suites, and other lavatory equipment.

Clow standards of quality and years of experience insure a character of marble work in keeping with the finest buildings.

JAMES B. CLOW & SONS

General Offices

534-546 S. FRANKLIN ST., CHICAGO

Sales offices in principal cities

CLOW

Manufacturers' Catalogs

WARREN WEBSTER & COMPANY, Camden, N. J. "Webster from the Air." Views of various large cities.

Architects, engineers and builders have little need of information regarding the excellence of the heating apparatus made by this well established firm, for their product speaks for itself and is in use everywhere, from one end of the country to the other. None the less, probably to provide in easily accessible form data regarding the most recent developments of each one of its specialties, the company has issued this booklet or brochure giving details regarding "some of the elements that assure the success of 30,000 Webster installations," details such as the Webster Modulation Valve, the Webster Sylphon Trap, and the Webster Sylphon Attachments, with illustrations which show the methods by which these accessories are used in a heating plant.

Wholly apart from its value as giving this information in helpful form is the character of the brochure itself. The wide use of the equipment made by Warren Webster & Company, used in every city in the country, probably suggested the photographing from the air of the 24 leading cities in the United States, and the booklet gives aerial views of cities from Boston to Seattle and from Minneapolis to New Orleans which are interesting indeed. They prove, for one thing, that all American cities are now practically alike and have lost—or are rapidly losing—any distinctive architectural character which was originally possessed. This brochure is one of the most interesting details of advertising matter we have ever seen.

GILLIS & GEOGHEGAN, New York. "The G & G Telescopic Hoist, with Automatic Gear Shifting Brake Device and Silencer."

The growth of the practice of having many of the service departments of modern buildings of different kinds in basements necessitates having some method of close connection between the level of the basement and that of the street or the sidewalk. This is required not only for the proper receiving of deliveries of many kinds, which must be taken into the basement, but also for raising to the street level the quantities of ashes and garbage which often accumulate in even a single day in a large structure.

For these and various other uses the hoists made by Gillis & Geoghegan are well and widely known, and this new booklet fully describes the electric and hand power models which the firm supplies. The principle by which these hoists are operated is so simple that they are not likely to get out of order or to require repairs. In addition to dealing with the hoists themselves, the booklet describes and illustrates the door opening and closing devices which go with the hoists, and various other details.

THE EAGLE-PICHER LEAD COMPANY, Chicago. "Fighting Rust with Sublimed Blue Lead." "Chemical Analysis of Lead and Its Compounds."

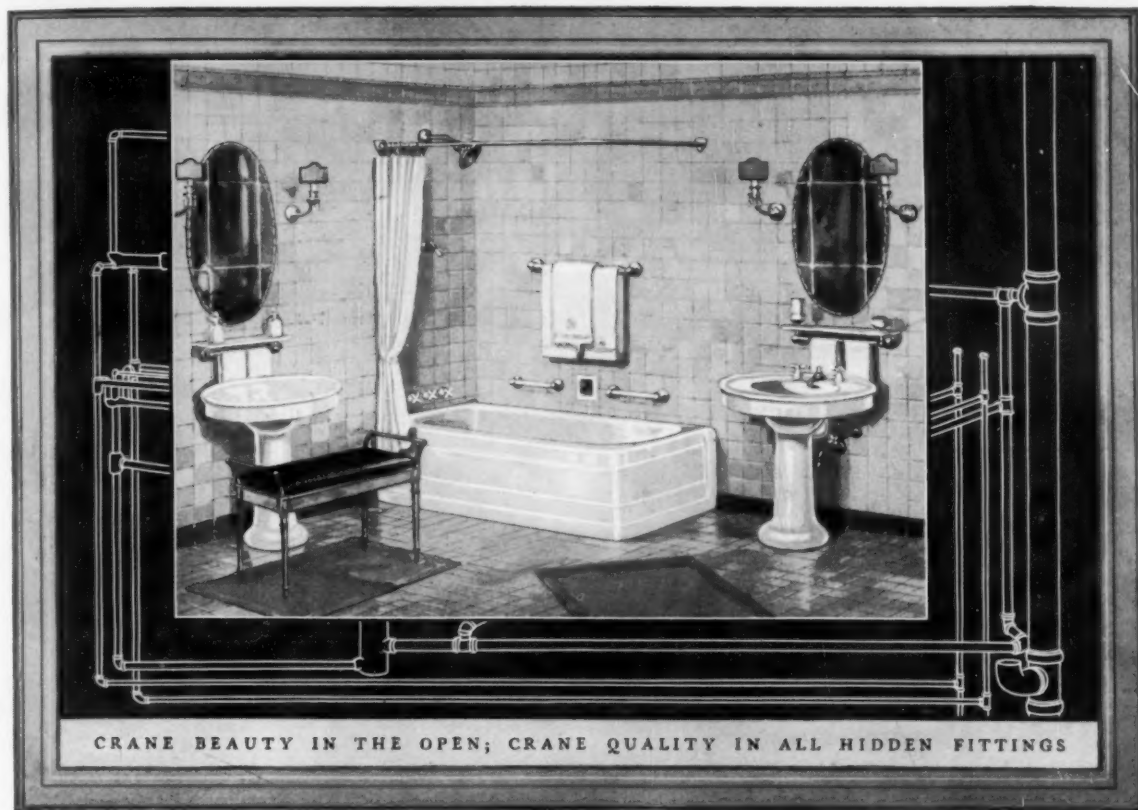
Engineers and architects whose work involves wide use of steel and iron are fully aware of the problems and dangers presented by corrosion which tends to turning these metals into substances much similar to natural ores, thus reversing the work done to reduce the ores into metals suitable for building and engineering. The means of preventing or resisting corrosion generally resorted to is the covering of iron or steel surfaces with some rust-resisting material, but notwithstanding all efforts at protection the annual losses due to corrosion are great.

Of the two works mentioned here, the first deals with the use for this purpose of sublimed blue lead ground with pure linseed oil and made into a paste which when it is to be used is mixed with oil, drier and thinner and used much as a paint would be. The latter of these two publications is a study of lead, an examination of its composition and the substances which are more or less composed of materials derived from it. Lead in one form or another enters into so many of the substances used by architects, engineers and builders for countless purposes that familiarity with the analysis and properties of lead, is important, and these brochures are useful.

THE ASSOCIATED TILE MANUFACTURERS, Beaver Falls, Pa. "Glazed Tiles and Trimmers." Publication No. K-400.

The great variety of purposes for which tiles are now being used leads not only to their manufacture in a vast number of kinds, but also to the necessity of supplying them in forms which are practical. The details of tiling which are included in the term "trimmers," such as quarter-rounds, coves, bases, caps, returns, architraves, plinths and mouldings of many kinds are highly important for the economical use of tiling in floors, wainscots, and other places where their installation is common.

In this volume there are issued the data which are important for architects and builders as well as for tiling contractors and tile setters. It will be remembered that all the tile manufacturers included in The Associated Tile Manufacturers have adopted standardized shapes and sizes, and these shapes and sizes are catalogued and listed here. Not only are shapes and sizes standardized but the standardization extends to grades of tile, "Selected," "Standard," and "Commercial." These grades have nothing to do with qualities, since tile of all the grades are produced from identically the same materials and with the same care, but because of limitations in the processes and firing conditions there are likely to be variations in shades, sizes and planes, which necessitate their being sorted into different grades. This useful little volume should be on file in every office.



Unless you have watched a modern home in process of building, you may have only a vague notion of the various pipe lines, valves and connections which are buried behind the walls and beneath the floors.

Yet the health and happy comfort of your household depend as much on the smooth working of these hidden necessities as on the convenience and fine

proportions of the Crane fixtures whose beauty adds to the charm of your home.

It is the business of Crane service to supply this need for *complete* sanitary and heating systems as dependable and enduring as they are inviting in form. Branches and offices in 145 cities make it easy to choose plumbing materials satisfying both your taste and your building budget.

CRANE

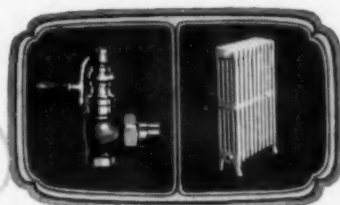
GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVE., CHICAGO
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Works: Chicago, Bridgeport, Birmingham, Chattanooga, Trenton and Montreal

CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO
CRANE-BENNETT, LTD., LONDON
C^{IE} CRANE, PARIS



Radiator Valve No. 231 "Corto" Radiator

Taken from here for former volume

Manufacturers' Catalogs and Business Announcements

O'BRIEN VARNISH COMPANY, South Bend, Indiana.
"Architectural Specifications for Varnishes, Enamels,
Wall Finishes and Stains."

Manufacturers of various materials which enter into buildings have found by experience that to insure satisfactory use of their materials it is wise to supply to purchasers specifications or directions for the use of the materials so carefully prepared that they are "fool proof." In this brochure the O'Brien Varnish Company gives directions for using its various products. The directions or specifications, each of which is printed on a page to itself, describes what should be the condition of the surface to be treated before the painters begin their work; then the preparatory coat or coats are specified, and directions for the following coats and finishing coats are given.

Particularly helpful are the specifications covering the finishing of interior woodwork by the processes in which fillers, stains and varnishes are used.

ANNOUNCEMENTS

John Russell Pope on April 15 opened new offices at 542 Fifth Avenue, New York.

Bagg & Newkirk, Architects, are now occupying offices at 255 Genesee Street, Utica, N. Y.

F. P. Platt & Bro. announce their removal to new offices at 221 West 57th Street, New York.

Leonard Anthony Gliatto announces the removal of his offices to 343 South Dearborn Street, Chicago.

Gibbs & Waltz announce their removal from the Ithaca Trust Co. Building to the Ithaca Savings Bank Building, Ithaca, N. Y.

William Quincy Bendus announces the removal of his office to the McCormick Building, 332 South Michigan Boulevard, Chicago.

Marks & Kann announce their removal from 28 Jackson Building to 703 Home Trust Building, Pittsburgh.

Pond & Pond, Architects, are occupying new offices in the Tower Building, 6 North Michigan Avenue, Chicago.

The office of Chatten & Hammond was established on April 1 in the Burnham Building, 160 North La Salle Street, Chicago.

Childs & Smith, Architects, have established new offices in the Central Life Building, 720 North Michigan Avenue, Chicago.

W. H. Spaulding, Architect, announces the removal of his offices from 375 Fulton Street to 163-18 Jamaica Avenue, Jamaica, N. Y.

H. M. Haven & A. T. Hopkins, Inc., Engineers and Architects, announce their removal from 40 Court Street to 11 Beacon Street, Boston.

A. F. Gilbert announces his removal to 358 Fifth Avenue, New York.

B. Albert Comm announces the establishment of his offices at 20 West Jackson Boulevard, Chicago. Catalogs and bulletins of manufacturers are desired.

Lundblad & Lundblad, Architects and Engineers, announce their removal to 912 Donovan Building, Detroit. Catalogs of manufacturers are requested.

Annette Hoyt Flanders, Helen Swift Jones, Associate, announce the opening of offices for the practice of landscape architecture at 8 West 51st Street, New York.

Walfred Erickson, Architect, announces the opening of his office at 344 East 149th Street, New York. He would appreciate receiving manufacturers' samples and catalogs.

John Sloan announces that T. Markoe Robertson has been admitted to partnership under the firm name of Sloan & Robertson, with offices at 1 Pershing Square, New York.

M. Moriyama, Architect, member of the Institution of Japanese Architects, announces the establishment of his offices at No. 17, 3 chome Ginza, Kyobashiku, Tokio, Japan. Manufacturers' catalogs and samples are desired.

George & Zimmerman, Architects and Engineers, successors to George & MacLucas, are occupying new offices in the Meyer-Kiser Bank Building, Indianapolis. The members of the firm are Lawrence W. George and D. J. Zimmerman.

Announcement is made of the organization of the firm of Andrews, Jones, Biscoe & Whitmore, 50 Congress Street, Boston, for the practice of architecture. The members of the firm are Robert D. Andrews, I. Howland Jones, Maurice B. Biscoe, and John T. Whitmore. With the completion of work now in hand, the firm of Andrews, Rantoul & Jones will cease to exist.

The interest of J. Martin Brown in the firm of Brown & Derrick, Inc., has been acquired by Robert O. Derrick, and he will continue practice under the name of Robert O. Derrick, Inc., at 120 Madison Avenue, Detroit. Branson V. Gamber, George S. Fleming and John T. Briskey are associate members.

VAN RENSSELAER P. SAXE, C.E.

Consulting Engineer

**STRUCTURAL STEEL
CONCRETE CONSTRUCTION**

Knickerbocker Building

Baltimore

Why the finer new buildings use *Whale-Bone-Ite* Toilet Seats

Their long life makes them an economical investment: most sanitary and easily kept clean

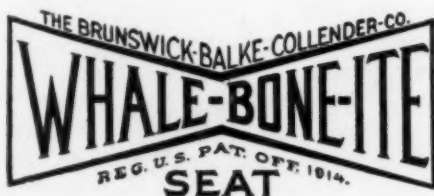
Whale-Bone-Ite toilet seats pay for themselves out of the repairs they never have. Fewer seats need replacement, revarnishing and finishing. They never warp or have broken hinges. Lifetime use cannot mar the perfect finish of *Whale-Bone-Ite*. The true economy of these seats is proved only after years of satisfaction, with no repairs, no worry or expense.

FOR an installation of permanent satisfaction, architects, building managers, expert plumbers, today recommend *Whale-Bone-Ite* toilet seats.

Years have proved their superiority in 10 important ways. Each exclusive feature is guaranteed. Insist on *Whale-Bone-Ite* seats for these 10 reasons:

| | |
|------------------------|------------------|
| Permanent Durability | Acid-Proof |
| One-Piece Construction | Non-Inflammable |
| Non-Warping | Permanent Finish |
| Sanitary | No Exposed Metal |
| Easiest Cleaned | Comfortable |

Whale-Bone-Ite comes in two finishes to match the toilet room fixtures: ebony or mahogany. Leading plumbers and jobbers supply *Whale-Bone-Ite*. Refuse imitations.



This striking new building of the American Radiator Co., on 40th Street, facing Bryant Park, New York, is completely equipped with *Whale-Bone-Ite* toilet seats, model 21-96, in ebony. The building is finished in black and gold, with stone facing, and has created considerable comment recently. The architect was Raymond M. Wood.

If your jobber or plumber can't supply you, write direct to *Whale-Bone-Ite* Division

THE BRUNSWICK-BALKE-COLLENDER CO., 623 South Wabash Avenue • CHICAGO

Manufacturers' Catalogs

THE MAHOGANY ASSOCIATION, INC., New York.
"Historic Mahogany."

Students of furniture find the subject divided broadly into three sections: the age of oak, the age of walnut, and that of mahogany, each being the time during which the wood concerned was being chiefly used or was particularly favored by the world of fashion. The age of mahogany, in which we may be said to be still living today, began toward the close of the sixteenth century when Sir Walter Raleigh introduced the wood into England, and with mahogany are identified all the great furniture makers whose names have survived—men such as Chippendale, Hepplewhite and Sheraton in England, and that most eminent of American furniture makers, Duncan Phyfe of New York.

This little brochure has been published probably to keep before the eyes of architects and decorators the merits and possibilities of mahogany,—if indeed it be necessary to advertise the possibilities and merits of a wood universally popular, the very name of which suggests luxury and beauty. In its pages are contained many facts of interest to the student, and the pages are enlivened by a number of spirited little drawings of details of furniture, such as the pediments frequently used upon large pieces of wall furniture, and the legs and feet of tables and chairs. The booklet should certainly find a place in the library of any architect or student of furniture designing or interior decorating by reason of its valuable data.

THE DURIRON COMPANY, Dayton. "Duriron Acid-Proof Building Equipment; Drainage; Ventilation. Bulletin No. 134."

The strength of even most metals and other substances which are supposedly imperishable is not always proof against the insidious attacks of acids and fumes which are derived from various chemicals. Thus experience has proved that cast iron is attacked and eventually destroyed by many acids which are in common use, while steel and wrought iron are generally even less resistant to acid attack than cast iron; brass will not withstand the attacks of such widely used corrosives as nitric, strong sulphuric and muriatic acids and iron chloride, and copper is affected similarly to brass. Substances of other kinds are likewise affected disastrously by acids and fumes. Tile is rapidly disintegrated as soon as its glaze has been eaten away; glass is so easily chipped or cracked that its value is not likely to be great, while other substances, such as fiber, warp from temperature variations, become softened by liquids and sag and leak. And yet buildings of countless sorts, such as chemical plants and laboratories and factories where acids of different kinds are much used, are dependent upon these materials for their drain pipes as well as for the fans, hoods and linings of ducts which are used in ventilating apparatus.

Difficulty of securing a material suitable for uses such as have been described was the cause of the perfecting and introduction of "Duriron," a metal which will withstand these conditions. Research scientists carefully analyzed and studied the requirements and succeeded in producing an alloy of iron which is entirely resistant to the action of commercial corrosives. Being a homogeneous metal it requires no protective coating and it is equally immune from attack inside, outside and all through its structure. The manufacturers' statement gives its constituents as silicon, carbon, manganese, sulphur and phosphorus.

This brochure or booklet, in addition to giving all possible data regarding "Duriron," catalogs the sizes of pipes, the different pieces used with piping such as hubs, bells and flanges, spigots, reducers, increasers and other details, together with the fans, impellers and other parts which have to do with ventilation. The brochure lists the names of a large number of architects who have specified "Duriron," and gives another list of important structures in different parts of the country in which it is used.

WESTERN ELECTRIC COMPANY, "The Lighting Manual."

Probably the necessity of instructing properly the large number of young architects and specification writers which each year finds at work is one reason for the publication of this brochure which should be on file in the office of every architect, builder or contractor. The use of electricity for lighting is of course now universal, and with its widespread use there comes the necessity of being fully informed regarding the wiring systems by means of which the electrical current is transmitted from its source to the lighting fixtures and regarding the lighting fixtures themselves by which the light is distributed. One of these subjects of course has to do with the best and most economical method of bringing current into a building, while the other covers its most economical consumption, and both are important, since it would be easy to fall into error by making a wiring system too small or too large for the work it must do, the result being insufficient lighting or waste of materials, or by using fixtures too large, so that they consume an unnecessary amount of current.

In this valuable brochure, therefore, the entire subject is covered fully and yet within brief compass. Explanations are given of various kinds of lighting systems, such as direct lighting, semi-indirect or totally indirect, and reasons are given for one type's being best adapted for use in a certain place. Directions are given for the correct installation of each type and regarding the kind of lighting fixtures which belong to each. The brochure also gives an endless quantity of valuable data regarding lamps, reflectors, diffusers and other details of equipment.



A "TARNIA" BATH FOR THE AVERAGE POCKETBOOK

The average man covets the beauty and convenience of the *Tarnia* bath that is finding such enthusiastic acceptance in so many homes.

There is room in the estimates of even modest homes or apartments which you may be designing, for the *Tarnia* bath shown above.

Sanitary and economical Vitrolite and similar

materials will replace expensive tiling on its sides. It may be set in any position. In a right or left corner or an alcove, it requires no more space than an ordinary tub.

Home builders will welcome your suggesting it. Apartment or hotel owners will foresee increased revenue. And CRANE in specification signifies dependable quality to all.

CRANE

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CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO

CRANE-BENNETT, LTD., LONDON

CRANE: PARIS, NANTES, BRUSSELS



Crane double branch elbow

Manufacturers' Catalogs

PRATT & LAMBERT, INC., New York; Buffalo; Chicago; Bridgeburg, Ont. "The Specification Manual."

Manufacturers of many kinds of material which enter into building discovered long ago that their efforts in supplying excellent materials often failed to give satisfaction to the owners of the buildings owing to their being improperly used. In the use of certain materials there is a great difference in various parts of the country and with different classes of workmen, and in few departments of building are there wider differences in matters of practice than in the use of paints, enamels, varnishes and the other varieties of what are broadly known as "painting materials."

To acquaint architects with the proper methods of using the many materials which the firm produces, Pratt & Lambert, Inc., are issuing a Specification Manual which describes the proper use of each. The 40-page book represents careful preparation, involving research and practical finishing experience gained in the manufacture and use of varnishes, enamels and kindred products covering a period of more than 75 years. It supplants all previous Pratt & Lambert specification books and contains, in addition to detailed specifications, some timely and readily available information on finishing interior and exterior surfaces. The facts in the manual, their presentation and arrangement, are the result of considerable thought, bearing uppermost in mind the convenience and preference of the specification writer and the architect. Several pages of the brochure are devoted to listing the many Pratt & Lambert products, giving a description of each.

INTERNATIONAL CASEMENT CO., Jamestown, N. Y. "International Casements." Arguments for Wider Use.

Has the demand for casement windows brought about their present development, or has the high standard of excellence which they have reached been the cause of their being more widely used? This type of window belongs to architecture of almost every form used upon the Continent and was employed universally in England until the time during the seventeenth century when the importation of new fashions from Holland brought the "double-hung" or guillotine window. The use of casements in America has of course been furthered by the improvements which have been made to them. The modern casement is of steel and of scientific strength and accuracy, possessing members which considerably strengthen the sash frame and act as a baffle against the wind and rain in the most exposed positions. It is accurately fitted, secure and weather-proof, and the casement form of window offers several advantages which are so well known by architects that they need not be enumerated here.

This publication might be described as a complete catalog to the use of "International Casements" and also an illustrated argument for their

more extended use. There is given every possible detail of data which architect or builder could desire concerning material, construction, glazing and hardware, together with drawings of casements and their various parts, and drawn details as well of sills, jambs, mullions, and the other parts of a building with which casements come into contact. But what will particularly interest a designer is a collection of illustrations from photographs of exterior and interior views of windows of countless old English houses together with detailed drawings of their casement windows. Among the illustrations are many from such well known houses as Owlpen Manor, Upper Swell Manor, Westwood, Penshurst Place, West Burton Manor, Compton Wynyates, Great Dixter and many more old places of different English periods. The volume also includes illustrations and details of many examples of modern American work by well known architects.

THE C. A. DUNHAM CO., 230 East Ohio Street, Chicago. "Excessive Fuel Consumption." How to Avoid It.

There may be a large difference between the cost of a heating system properly installed and economically operated and the same system carelessly equipped and managed, even though there is no difference in the amount of comfort which the system affords to occupants of the house. When the cost of heating a building is excessive, the trouble may be due to some small defect in the installation or to some error in the grading of some parts of the piping system. There are instances where some few radiators upon a system remain cold until they are heated by forcing the system to a high temperature when the difficulty could be quickly remedied at small expense by making slight changes in the pipes which serve these radiators. In other instances excessive cost of operating a heating system is due to not-keeping the boiler and piping system clean, oil and dirt being brought into the boiler with the return water.

This "folder" or "leaflet," issued by a concern which has made a particular and successful study of heating in its different aspects, is so filled with useful information that it should be had not only by architects, engineers and builders but by everyone who is in any way interested in heating plants.

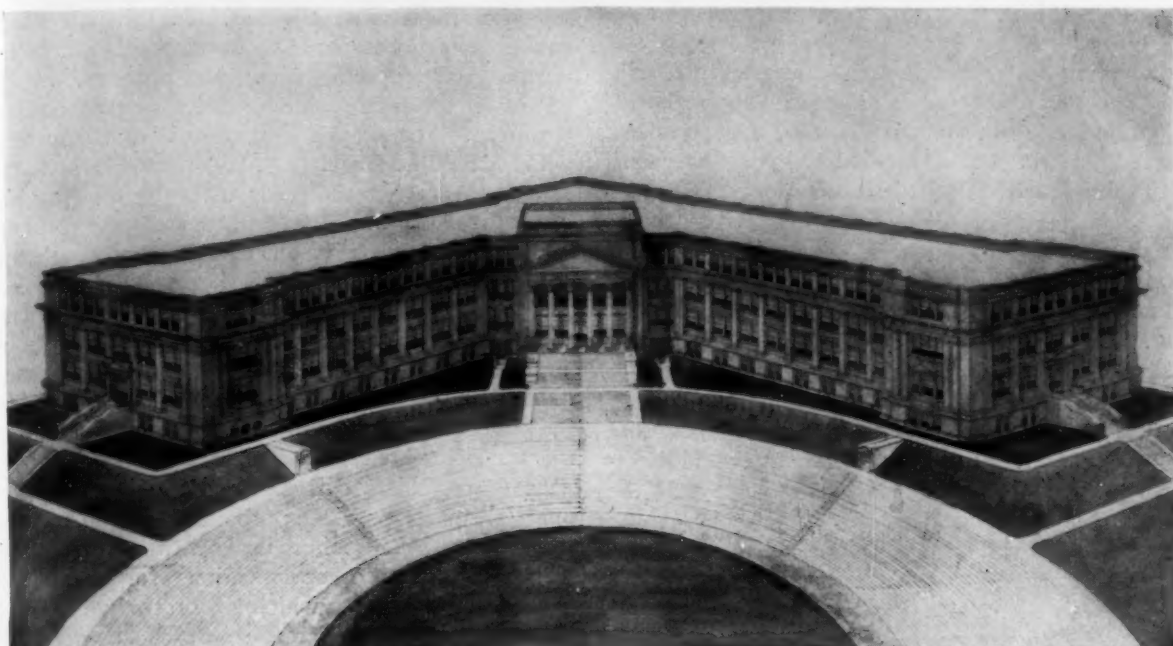
VAN RENSSELAER P. SAXE, C.E.

Consulting Engineer

**STRUCTURAL STEEL
CONCRETE CONSTRUCTION**

Knickerbocker Building

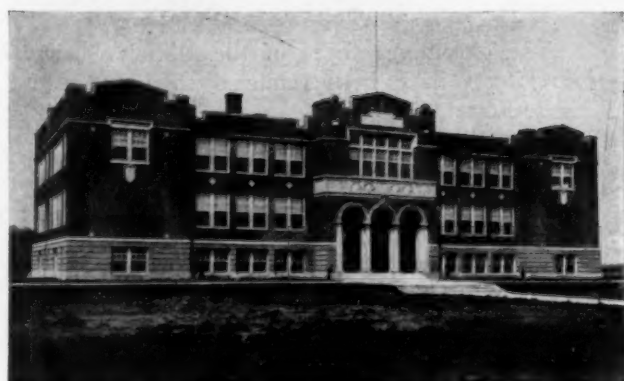
Baltimore



Architects
TROST & TROST
El Paso, Texas

THE EL PASO HIGH SCHOOL, EL PASO, TEXAS

Plumber
L. B. MCCHESENEY
El Paso, Texas



BETHEL TOWNSHIP CENTRALIZED SCHOOL, MIAMI CO., OHIO
Architect
WALKER & NORWICH
Dayton, Ohio

Plumbing Contractors
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Piqua, Ohio

SEVEN thousand modern school buildings have installed "Clow throughout." This testimony is valuable because

1. The school buildings of this country are among its finest examples of architectural taste. Quality of design and workmanship is insisted upon.

2. School use is *hard use*. Plumbing and plumbing accessories must give continuous good performance with the minimum of repairs and upkeep.

These seven thousand school buildings are seven thousand reasons why *every* school should have "Clow throughout."

JAMES B. CLOW & SONS

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Sales offices in principal cities

CLOW

Manufacturers' Catalogs and Business Announcements

AMERICAN CHAIN CO., INC., Bridgeport, Conn. "American Sash Chain." Data on Window Fittings.

Excepting where use is made of casements, windows are necessarily arranged with "double-hung" or "guillotine" sash, so made that they may be raised, lowered, or held open at any desired point by means of the weights by which they are counter-balanced. These weights, since they must be concealed, are placed within the thickness of the walls, behind the woodwork which forms the window's architrave, and since they can be reached only by removing this woodwork, at considerable inconvenience and cost, it is most desirable that the installation be carefully made in the first place, that the weights be neither too heavy nor too light to serve their purpose, that the pulleys and other mechanism be simple and therefore not likely to get out of order, and that the cords or chains be durable.

Owing to the wide use which architects and builders are making of the sash chains manufactured by the American Chain Co., Inc., it is hardly necessary to enter here upon a description of their advantages, and the purpose of this booklet is probably to keep before those interested particulars regarding the different weights and sizes of these chains and similar details concerning the fittings which go with them. The links of the American Sash Chain are flat which gives the chain a strap-like action as it runs smoothly and freely over a pulley which has the regular sash chain action. There is no possibility of there being a "kink" in the chain which might make it impossible to raise or lower the sash. The company also manufactures a Round Cord-Pulley Chain, designed as the name implies to be operated over the usual round faced pulley, but since it is a chain it cannot stretch, unravel, or rot, nor can it be cut by sharp edges.

Besides listing sizes, thicknesses, finishes and weights of these different kinds of sash chains and the fixtures which are used with them the booklet gives and illustrates an impressive list of well known buildings of every kind in all parts of the country in which the chains supplied by the American Chain Co., Inc., are being successfully used.

THE RICHARDSON COMPANY, New York, Chicago, Dallas, Atlanta, Cincinnati, New Orleans. "Standard Specifications for Roofing, Waterproofing, Dampproofing and Insulating."

The value of sheet roofing of any kind depends upon two things: (1) a pliant, durable, adhesive waterproofing bitumen, which shall be free from destructive chemical elements and entirely impervious to water; (2) a felt foundation which in spite of severe weathering will permanently hold this bitumen fast to the roof. It is much easier for the layman or even for many architects and builders to understand the importance and nature of the felt than the properties of the bitumen, the function of

which is to saturate the felt. In the past hardly enough effort was made to develop this vitally important waterproofing agent, the bitumen, and the Richardson Research Laboratories worked and experimented for years in order to obtain a material which would be free from the defects which characterized the earlier materials used for this purpose, the result being "Viskalt," a blend of waterproofing bitumen said to be more efficient than anything which has ever been devised. This bitumen is used upon felt which possesses four different requirements, each dependent upon the other; they are (a) proper absorptive capacity; (b) tensile strength, (c) flexibility, and (d) uniformity, and proper weight and thickness are secondary to these principal requirements. All of these requirements are important.

Closely allied to efficient roofing are the subjects of Waterproofing, Dampproofing, and Insulating, and this valuable brochure deals with all these topics, giving directions or specifications for the use of Richardson materials which, if properly used, will secure the results desired. Just as the materials themselves are the outcome of years of experiment, the specifications are the result of thorough research work by the best chemists and roofing experts.

ANNOUNCEMENTS

The executive offices of the Illinois Society of Architects have been removed to 160 North La Salle Street, Chicago.

The new office of Harvey Dakin, Architect, is at 413 Thatcher Building, Pueblo, Col., and not Syracuse, N. Y., as was announced in a recent issue of THE FORUM.

Herman R. Kaplan has opened an office for the practice of architecture at 1628 Æolian Hall, New York. Manufacturers' catalogs and samples would be appreciated.

The firm of Bellows & Aldrich having been dissolved, Robert P. Bellows will continue the practice of architecture at 8 Beacon Street, Boston. George W. Gilmore will be associated with Mr. Bellows.

William T. Aldrich, formerly of the firm of Bellows & Aldrich, has opened offices at 30 Newbury Street, Boston. Associated with him are James A. Holt and Stanley B. Parker.

Nichols & Sheppard, Architects, have admitted to partnership George Y. Masson, and the firm will now be known as Nichols, Sheppard & Masson, with offices in the Dowler Building, Windsor, Ontario.

H. Wanetick, a civil engineer, formerly of Pittsburgh, is now in Palestine engaging in building construction and would be glad to receive the catalogs and samples of manufacturers. Mr. Wanetick is to be addressed care District Engineer, Jerusalem.



*Henry Raeder, Architect
Wells Brothers, Builders
John Degnan, Inc., Plumbers*

THE AMERICAN FURNITURE MART, CHICAGO

*George C. Nimmons Co.
and N. Max Dunning
Associate Architects*

Equipped with "Clow Throughout"

The equipment supplied by Clow includes: 114 M-3194 special design Closets; 15 M-3196 Closets; 24 M-4362 Lavatories; 14 M-4235 Lavatories; 2 M-4275 Lavatories; 20 batteries of Urinals (M-3418 and M-3414); 8 M-3656 Showers; 126 M-4020 Lavatories; 34 M-5140 Slop Sinks; 2 M-4536 Fountains; 2M-3590 Tubs; 1 M-3594 Tub.

The American Furniture Mart, on the Lake Shore Drive, Chicago, contains over 1,500,000 square feet of floor space, the largest amount in the world under one roof. This building, as its name implies, is the national market-place for fine furniture, containing sales and exhibition rooms of manufacturers all over the country. Its appointments of every sort necessarily conform to the highest standards of home furnishing.

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Manufacturers' Catalogs

WALLACE & TIERNAN CO., INC., New York. "Dry Chemical Feeders." Some Advantages of Their Use.

Although the use of certain chemicals in powder form is far more advantageous than their use in solution, it has long been necessary to use them in liquid form owing to the difficulty of securing proper distribution of the chemicals in the form of powders. Many chemicals, however, which are now used in solution can be applied as dry powder if appropriate control mechanism is made use of. Particularly is this true in water purifying plants where the difficulty of applying and controlling alum, soda ash, sulphate of iron and milk of lime solutions is avoided when it is possible to use these chemicals in the dry state. Dry feeding brings an end to difficulties from leaking tanks, corroded constant level boxes, clogged orifices, broken valves and the untidiness and disagreeable features which are common to solution feed systems. Dry feed application reduces labor, provides a ready and instant check on chemicals, and in operation effects a saving in materials.

This folder describes and illustrates the W. & T. Dry Feeder and lists a number of cities and towns in the water purification plants of which it is used. It also gives the names of a number of large manufacturers who are using the feeder in their plants. In operating this feeder the pulverized or granulated chemical is placed in the hopper. The chemical flows on to a revolving feed table through the feed spout, this table together with suitable agitator mechanism being belt-driven from an electric motor, water motor, or line shaft. A stationary scraper removes the chemical from the revolving feed table, diverting it to the receiving hopper from which it may be conducted by gravity feed to the point of application as a dry chemical. If desired the chemical may be mixed with water in the receiving hopper and the resultant solution fed through a water-operated ejector to the point of application. The rate of chemical feed is regulated by raising or lowering an adjustable collar between the feeding spout and the table. This collar operates on a calibrated rod. The capacity of the feeder may be changed by altering the speed of the table, this being accomplished by changing the size of the driving pulleys.

Chemicals vary greatly as to fineness, moisture content, etc., so that it is impracticable to empirically calibrate a dry feed apparatus at the factory. It is a simple matter, however, to calibrate the machine at the time of installation for the particular kind and grade of chemical which is being used.

ARKANSAS SOFT PINE BUREAU, Little Rock, Ark. "Not a House But a Home." Houses and Plans.

Manufacturers of building materials of various kinds find that a certain method of attracting the attention of those interested in building is to issue publications containing illustrations of attractive and practical houses, together with plans of their inte-

riors. This is, of course, the most logical way of gaining the favorable notice of those who, it is presumed, will eventually use the materials which the manufacturers produce and sell.

In this brochure there are given perspective views, drawings of elevations, and the floor plans of quite a number of small or medium sized houses which would be appropriate for almost any part of the country. Along with the illustrations and plans there are given what the publishers of the brochure evidently consider approximate building costs, though probably, in this day of constantly changing prices, these figures are intended only to serve as a basis upon which a prospective builder may make his calculations and consider the possibilities of making the venture of building.

INDIANA LIMESTONE QUARRYMEN'S ASSOCIATION, Bedford, Ind. "Distinctive Houses of Indiana Limestone."

While marble might be regarded by many as more luxurious, stone would unquestionably be considered by the greater part of the world as the most desirable of building materials. It has been used in every type of architecture which the world has ever seen, and it is the material in which the masterpieces of every style have been built. It is doubtful if architecture in America has been as successfully developed in any other material as in stone, and in this brochure there are illustrated many of the most notable of American residences of which the exteriors are entirely faced with stone or for which stone is largely used in the form of trimming; among these are the two Vanderbilt houses at Fifth Avenue and 53rd Street, other notable houses in the styles of the Italian, French or English Renaissance elsewhere in New York or in other cities, and country homes in different parts of the United States.

In this brochure, issued by the Indiana Limestone Quarrymen's Association, there are illustrated many of the most notable examples of the type of buildings under consideration. In THE ARCHITECTURAL FORUM for July, 1924, there was given a review of the "Portfolio of Designs for Moderate Cost Indiana Limestone Houses" which considered the value of the material for houses of average sizes and costs. The present work discusses limestone in its relation to structures of greater sizes and costs, and yet it is plain that the value of the material is the same whatever be the manner in which it is used.

Limestone is a fine, even textured oolite or non-crystalline stone of beautiful soft color values which vary in the different grades from a somewhat grayish buff on through silver grays to a medium-toned gray of a cast which is slightly bluish. The particular kind of limestone which is considered in this brochure forms the ledges in two of the counties of southern Indiana. The stone is not quarried by blasting, but is cut in huge blocks from the solid ledge by machinery. The material, which is not

From the Ground Up



Treleven Building,
Fond-du-lac, Wisconsin



U. S. Senate Office Building,
Washington, D. C.



Office Building, The Austin Com-
pany of California, Los Angeles

MEDUSA Products will help make your work more effective, at every step in the planning and construction of office and industrial buildings. For example:—

Foundation Walls and Floors. Concrete work can be kept permanently waterproof by using Medusa Waterproofed Gray Cement or by adding Medusa Waterproofing Powder or Paste, to ordinary portland cement. Even where exposed to a direct and constant head of water, concrete so prepared will remain free from moisture inside.

See Specifications in "Sweet's"—Pages 102-103.

Mortar for setting Marble, Terra Cotta, Brick, Glazed Tile, Granite, Limestone, etc. Medusa Non-staining White Portland Cement, Waterproofed, offers these distinct advantages: It will not stain nor discolor, nor will it affect the materials with which it is used. It may be tinted to harmonize with any color scheme. It will not absorb water, even in driving rain. It will prevent efflorescence.

See Specifications in "Sweet's"—Pages 350-351

Stucco of Medusa Non-Staining White Portland Cement, Waterproofed. Lends a distinctive finish to public buildings of many types. Will not stain nor discolor, nor absorb water even in a driving storm. "Medusa" is the only waterproofed White Cement on the market.

See Specifications and Details in "Sweet's"—Pages 349-350-351.

Precast Building Trim. An admirable substitute for cut stone, when executed in Medusa Waterproofed White Cement.

Ornamental work, fountains, balustrades, etc., in almost infinite variety, can be produced by competent manufacturers of precast work, using Medusa Non-Staining White Portland Cement, Waterproofed.

Other important uses for Medusa Waterproofed White Cement—the only waterproofed white cement on the market—include:—

CONCRETE BLOCK FACING
CEMENT BRICK
CEMENT MANTELS
FLOOR TILE
LAMP STANDARDS
RAILROAD WHISTLE POSTS

SWIMMING POOLS
SHOWER BATHS
TRAFFIC MARKERS
TERRAZZO TILE
TABLE TOPS AND
COUNTERS, ETC.

The Medusa Books will help you in preparing recommendations covering the use of Medusa Waterproofed White Cement on any given piece of work.

We will gladly send copies of the books on request.

THE SANDUSKY CEMENT CO., Dept. F, Cleveland
New York: 350 Madison Ave. Dixon, Ill.: 34 Dixon National Bank Bldg.
Manufacturers of Medusa Non-Staining White Cement (Plain and Waterproofed); Medusa Water-
proofing (Powder and Paste); and Medusa Gray Cement (Plain and Waterproofed).

MEDUSA

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Will Help Make Your Work More Effective

Manufacturers' Catalogs and Business Announcements

very hard as it occurs in the ledge, is removed from the earth by what is known as the "channeling" process. Channel cuts are made in the solid ledge from 4 to 6 feet apart and from 8 to 12 or even to 14 feet in depth. These cuts may be of any length from 20 to 100 feet or more, according to the length that it may be desired to quarry at a single operation. The entire production process, which includes finishing as well as the actual quarrying, is carried on by machinery and is more like modern manufacturing on a vast scale than ordinary stone quarrying.

The brochure gives to architects and builders all the data regarding colors, qualities, and sizes of sandstone which are necessary for its intelligent use; and the Association offers the help of its Service Department where problems of an unusual nature must be solved by builders or architects.

THE RIVET-GRIP STEEL CO., Cleveland. "The Rivet-Grip System of Bank Vault Reinforcement." A Handbook on the Design and Construction of Modern Vaults.

It has long been one of the anomalies of building that while the doors of bank vaults are often of great weight and thickness and of the most complicated mechanism imaginable, the walls, floors and ceilings of the same vaults are frequently of a thinness and of a general character which barely escapes being flimsy. It is easy, of course, to quote the lines about a chain's being only as strong as its weakest link and to paraphrase the words into something about a bank vault's being only as secure as the thinnest part of its walls, ceiling or floor. It is extremely doubtful if human ingenuity is equal to designing or constructing a vault which would be absolutely proof against attack over a considerable period. What might be termed the "time element" enters vitally into the calculations, and probably the utmost which could be hoped for would be to secure a vault so strong in its resistance to assault that it could not be entered in any period during which the vault would not be under observation. In any plan of security for bank vaults considerable dependence must necessarily be placed upon watchmen, patrol systems, and the devices by which alarms are sounded if a vault is tampered with, touched, or indeed even approached.

In planning the different buildings for the Federal Reserve Bank it was important that construction and equipment represent absolutely the final word in completeness, and with this in view some tests were conducted in 1920 at the Bureau of Standards in Washington on all types of vault reinforcement in common use at that time to determine their respective merits for use in the vaults of the various Federal Reserve Bank buildings; it was largely due to these tests that demonstration was made of the instability of the average bank vault. The tests for safety demonstrated the unreliability and untrustworthiness of many types of bank vaults and showed the superiority of vaults in which walls, floors and

ceilings are constructed of concrete reinforced with steel in a way which renders them as nearly burglar-proof as they can be made, and vaults built upon the system used by the Rivet-Grip Steel Co. have been installed in a number of Federal Reserve Bank buildings, among them those in Cleveland, Pittsburgh, St. Louis, San Francisco, Little Rock, Louisville, and Minneapolis.

It would hardly be possible in very limited space to adequately describe this system by which steel reinforcement is so used in the concrete that the entire mass acts as a monolith unit equally strong at all points. Economy is possible even in the securing of safety, for the Rivet-Grip frames or units are to be had in many shapes and forms suited for use in different positions, and since all the material is shop-fabricated and is sent to the site ready for installation, no filling or bending has to be done when installation is to be made, and ordinary building workmen can do the installing accurately and quickly. This material, being produced on a quantity basis in large, well equipped shops, can be marketed at a price which is low in view of the special nature of the material and the nature of the fabrication involved. The entire brochure forms a valuable addition to the data dealing with bank vaults and safety provisions, and the wide scope of its information should make it of the first importance to architects, engineers and builders who are concerned in any way with the subject. A long list is given of important banks (other than Federal Reserve Banks) in which Rivet-Grip installations have been recently made. This adds to the booklet's interest.

ANNOUNCEMENTS

Charles A. Sussdorff, for 29 years Executive Deputy of the office of the State Architect, Albany, has opened offices for independent practice at 68 Chapel Street, Albany. Catalogs and samples of manufacturers would be appreciated.

Callix Edwin Miller, formerly associated with William M. Ellwood, announces the opening of offices for independent practice of architecture at 605 J. M. Studebaker Building, South Bend, Indiana. Manufacturers' catalogs would be appreciated.

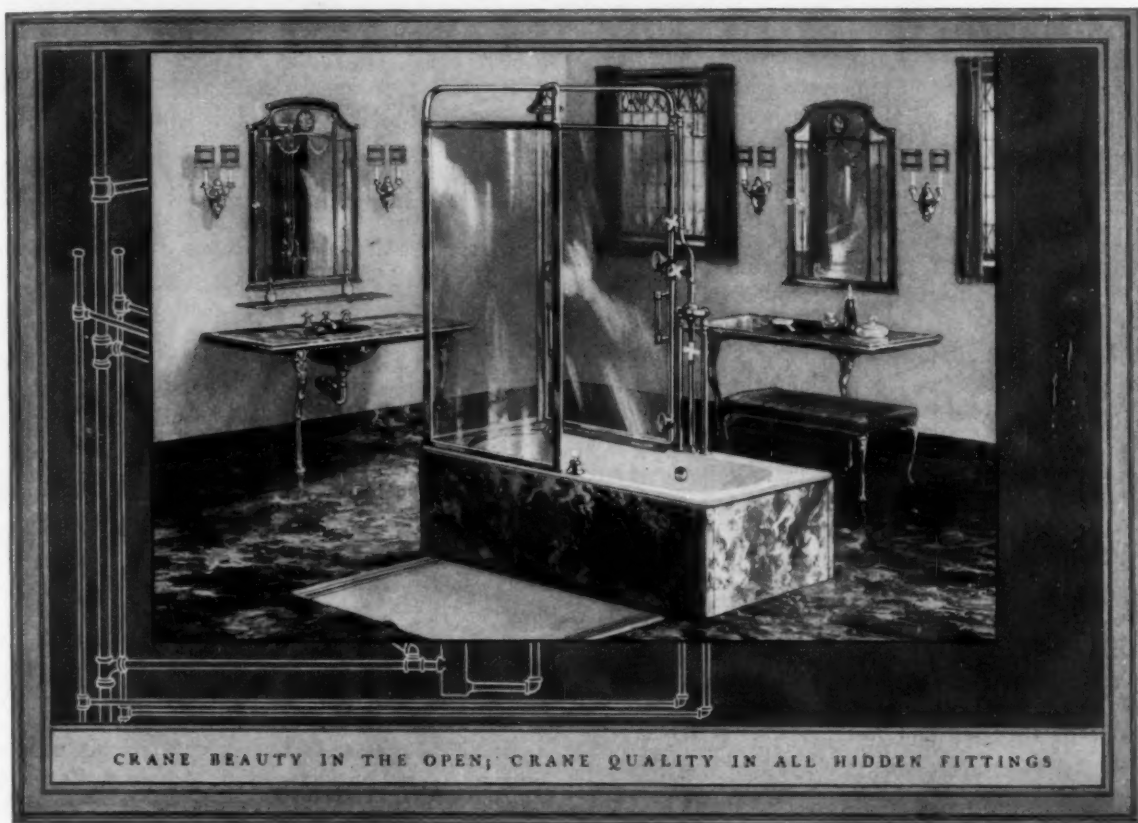
VAN RENSSELAER P. SAXE, C.E.

Consulting Engineer

**STRUCTURAL STEEL
CONCRETE CONSTRUCTION**

Knickerbocker Building

Baltimore



CRANE BEAUTY IN THE OPEN; CRANE QUALITY IN ALL HIDDEN FITTINGS

The most interesting setting a bath can be given is in the open, away from walls and corners. And now the new Crane *Crystal* shower provides the final luxury of a curtainless, splash-proof shower adapted to use in any setting in combination with the *Tarnia* bath.

Inclosed on three sides in plate glass, framed in standards of nicked brass, water is led to the overhead needleshower and four horizon-

tal sprays through two of the vertical supports. The hot-and-cold mixing faucet supplies tempered water to the shower, sprays and tub. Large hand grips on main supports at both sides. All valves within easy reach.

The *Tarnia* bath shown is encased in black and white marble, matching the *Neumar* lavatory and dressing table. Tiles of any color or pattern can also be used for the setting.

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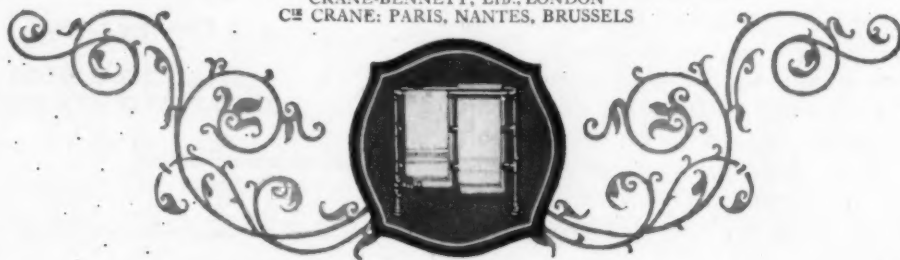
National Exhibit Rooms: Chicago, New York, Atlantic City, San Francisco and Montreal

Works: Chicago, Bridgeport, Birmingham, Chattanooga, Trenton and Montreal

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Crane "Towel Warmer" No. C25010

Manufacturers' Catalogs and Business Announcements

KELLEY ISLAND LIME & TRANSPORT CO., Cleveland.
"Studies in Lime." Some of Its Uses in Building.

The fact that lime in one form or another enters into the construction of almost every building erected is reason enough for study of lime and for the careful selection from the many varieties upon the market of the particular kind of lime which would be best suited to the work in hand.

A material of such importance demands that considerable care be used in its manufacture, grading and marketing, as well as in its use, and one of the reasons for the publication of this well presented brochure or booklet is to explain the varieties of lime supplied by this widely known concern, the methods by which lime of different kinds is made, and to give suggestions or instructions by study of which builders and contractors may secure the best results to be had from excellent materials. It is a valuable work upon the subject.

In giving suggestions for the best use of lime, the booklet touches upon a field in which architects feel a particular interest. The plastering of the interior of a building, always a matter of importance, is more important than ever in these days when clients, with perception rendered acute by the growing public interest in architecture, are demanding special varieties of plaster which involve texture as well as color. What is more, the tendency toward the following of definite period styles in interior architecture and decoration often brings a demand for plaster work in relief, which forms a highly important part of the interior architecture of certain of the English styles as well as of some of the styles of Italy and France. Plaster workers today are not always able to procure the patterns or designs which they must have to execute modeling in plaster successfully, and an invaluable detail of this important booklet is the including of scaled working drawings for plaster work of various kinds as well as of actual full-sized profiles of mouldings in plaster from which may be build up cornices for rooms of different heights. These designs or patterns include those for a number of all-over designs appropriate for ceilings, ornaments which may be used singly or in groups, patterns for friezes or borders which are useful when a band of plaster extends in frieze fashion around a wood paneled room, and one particularly useful page is that which supplies the details necessary for the wall and ceiling treatment of a public lobby where pilasters support a frieze in Classic fashion with the wall spaces between the pilasters arranged in large panels outlined by egg and dart mouldings worked out in plaster. This brochure, which is well worthy of a place in the working library of every architect or builder, is made in a size which adapts it to the filing system recommended by the American Institute of Architects, thus rendering it easily found when its use is required by the designer or the specification writer.

ANNOUNCEMENTS

Rankin, Kellogg & Crane announce their removal to 1805 Walnut Street, Philadelphia.

Howard H. Hahn announces the opening of new offices at 524 Madison Terminal Building, Chicago.

Henry La Pointe announces the removal of his offices from 152 to 145 East Flagler Street, Miami. Catalogs of manufacturers will be appreciated.

J. Edward Birmingham has reopened his offices at 45 Warburton Avenue, Yonkers, N. Y. Manufacturers' samples and catalogs are desired.

G. Dunderdale, Architect and Engineer, announces the opening of offices at 451 Mesa Road, Santa Monica Canyon, California. Catalogs and other publications are desired.

Henry A. Cook, formerly Secretary of the firm of John Lowry, Inc., is now associated with Robert B. Skinner, the firm being known as Skinner & Cook, Builders, 280 Madison Avenue, New York.

B. G. V. Zetterstrom has severed his connection with the firm of Santangini, Addeo & Zetterstrom, and has opened offices for the practice of architecture at 86 Weybosset Street, Providence.

The firm of Wright & Harper having been dissolved, Byron B. Harper will continue the practice of architecture at 125 West Main Street, Alhambra, California. Catalogs of manufacturers are desired.

With the retirement of T. P. James and the coming into the firm of L. T. Bengtson, the firm of Wysong & James has been reorganized and is now known as Wysong & Bengtson, with offices at Princeton, W. Va., and Charleston, W. Va.

The Thomas M. James Company, Bank Specialists and Equipment Engineers, Boston and New York, announces the reorganization of its New York office at 342 Madison Avenue. As at present constituted, Mr. James is President, F. P. Simonds and W. J. Ball are Vice-presidents, and E. D. Lord is Construction Engineer. Boston office, 3 Park Street.

VAN RENSSELAER P. SAXE, C.E.

Consulting Engineer

**STRUCTURAL STEEL
CONCRETE CONSTRUCTION**

Knickerbocker Building

Baltimore

Alden Park Manor, Detroit
(Right)
(Kenneth M. DeVos, Architect)
Completely Whale-Bone-Ite equipped.



Wade Park Manor, Cleveland
(Above)
(G. B. Posts & Sons, Architects—
W. G. Cornell & Co., Plumbers)
Equipped throughout with Whale-Bone-Ite:
262 of type 16-9; 21 of type 23-9.

Windermere Apt. Hotel,
Chicago (Below)
(C. W. & G. L. Rapp, Architects)
700 rooms and apartments—
Equipped with Whale-Bone-Ite
throughout.



In newest apartment hotels— Whale-Bone-Ite Toilet Seats

Most modern, attractive and sanitary—
practically indestructible

IN modern new apartment hotels tenants expect, and find, the latest conveniences, the finest equipment the world offers.

It is easy to understand why Whale-Bone-Ite toilet seats are standard equipment in many of these new de luxe dwellings.

For architects and owners realize that the slightly additional first cost for Whale-Bone-Ite seats not only means greater sanitary satisfaction to tenants, but eliminates upkeep and maintenance expense.

No Deterioration

Here are Whale-Bone-Ite's ten exclusive features. Each unqualifiedly guaranteed:

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| Permanent Durability | Acid-Proof |
| One-Piece Construction | Non-Inflammable |
| Non-Warping | Permanent Finish |
| Sanitary | No Exposed Metal |
| Easiest Cleaned | Comfortable |

Whale-Bone-Ite Seats come in two finishes—mahogany and ebony—to harmonize with the bathroom's fittings.

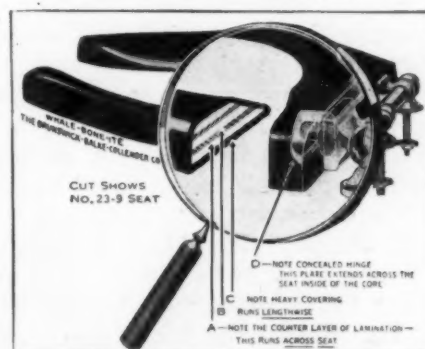
Leading plumbers and jobbers everywhere supply the genuine Whale-Bone-Ite. Or write direct to:

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THE BRUNSWICK-BALKE-COLLENDER CO.
623 South Wabash Avenue, CHICAGO

A few new apartment hotels which have been equipped throughout with Whale-Bone-Ite Toilet Seats:

| | |
|----------------------------|-----------------|
| Windermere-East | Chicago, Ill. |
| Sisson Hotel | Chicago, Ill. |
| Churchill Hotel | Chicago, Ill. |
| Wade Park Manor | Cleveland, O. |
| Fenway Hall | Cleveland, O. |
| Alden Park Manor | Detroit, Mich. |
| Webster Hall | Detroit, Mich. |
| Schenley Park | Pittsburgh, Pa. |
| Chatham | New York City |
| Vernon Manor | Cincinnati, O. |
| Alden Park Manor | Boston, Mass. |



THE BRUNSWICK-BALKE-COLLENDER CO.
WHALE-BONE-ITE
REG. U.S. PAT. OFF. 1914.
SEAT

Manufacturers' Catalogs

UNITED STATES RUBBER CO., "Mechanical Rubber Goods for the Building Trades."

The practical merits and advantages of rubber flooring are what have procured its wide use. Added to the excellent qualities inherent in the material itself, which provide quietness, durability, resilience, ease of cleaning and convenience of repair, there are the added qualities which skill and taste in design have given, and the result is a flooring which possesses all the practical advantages of marble besides being pleasant to walk upon and easy to the feet. A floor covered with square "tiles" of this material in two well contrasted colors, the squares possessing the rich veining of marble, leaves little to be desired upon the score of appearance, while the cementing to the floor and to each other of the squares means the presenting of a surface certain to render the best service which a floor of any kind could be expected to give. In this brochure there are given the facts and data necessary for the best use of this flooring material, and there is also given a list of some of the buildings in which it is being used, among them the Federal Reserve Banks in New York, Cleveland and San Francisco, which have been floored with half a million square feet of "U. S." tile.

This brochure deals with many of the products of the U. S. Rubber Co. useful in the building trades, so data is also given covering stair treads, perforated and corrugated rubber mats, hose of different kinds, belting, sheet packing and rubber covered wires, cables and cords, besides rubber in other forms.

VERMONT MARBLE COMPANY, Proctor, Vt. "Cleaning Marble." A treatise on the care of marble.

Considerable difference of opinion exists as to the propriety of cleaning marble. The marks which age and wear bestow upon certain materials add to their interest by softening or toning their surfaces, but in many cities, particularly where soft coal is largely used as fuel, the prevalence of smoke and soot works havoc with building materials of all sorts, in some instances even causing such disintegration of stone that historic structures are in danger of collapse. To freshen the appearance of buildings, therefore, recourse is often had to cleaning processes of different kinds, the vast difference in appearance between a building before and after treatment being such that it is likely to encourage the use of renovating processes. Regardless of the propriety of such cleaning, there is the question of processes to be considered. A method frequently adopted is the well known "sand blasting" process, which removes soot and other accumulations, but along with the disfiguring soot it removes something of the surface of the material itself; many will remember the appearance of the historic New York City Hall when some years ago a vigorous use of the sand blasting process left it in a condition as fresh and immaculate as it could have been when new.

In this brochure are given some suggestions for the proper cleaning of marble, not only when used as a building material, but also in monuments, wainscotings and for other purposes. The suggestions are the outcome of much study, and coming as they do from one of the leading marble houses in the country, are of value to architects, engineers, builders, contractors, and others interested in the construction, alteration, or maintenance of buildings.

INDUSTRIAL GAS SERIES; HOUSE HEATING. 91 pp., 9 x 11 ins. Price: \$1.50 to Members of American Gas Association; \$3 to others. Compiled and Issued by The American Gas Association, New York.

Selection of heating apparatus by architects, engineers or owners is a matter into which there enter various considerations. During the past few years the great difficulty of obtaining coal in certain parts of the country together with its cost has caused a general turning to the use of oil as fuel, while in certain highly favored sections of the United States there exist large deposits of natural gas which supply a fuel which costs little and is ideal in every way. It is used wherever possible.

Use of manufactured gas for heating is undoubtedly growing; indeed it has been said that as the use of gas as an illuminant gives way before the now all but universal use of electricity, the use of gas for such non-lighting purposes as heating and cooking has steadily increased to such an extent that the total use of gas has been increased. Its use for small heaters to heat individual rooms and for cooking upon a small scale is general, but the use of gas for cooking upon a large scale or as a fuel for use in heating systems is necessarily limited by the cost of gas which outweighs even its many advantages. Indeed it would seem that the gas companies themselves recognize the existence of these conditions and are not encouraging the extensive use of gas for these purposes by reason of the difficulties presented by local characteristics and the great investment necessary for plants which would be used only to a very limited extent in comparison to the size required to meet the extremes of demand, which it is difficult to reckon upon.

This brochure is a study into the possibilities of using gas as fuel. It goes with minute detail into all the aspects of house heating by gas and analyzes every detail which has a bearing upon the subject. One of the details which will be appreciated by architects and engineers is the incorporation of some of the standard methods of testing and rating appliances in order to eliminate the confusion due to lack of standards which has so long interfered with the successful application of gas to the heating of homes. Many installations of gas boilers have been total failures, as a result of improper rating which resulted in excessive fuel bills where the boiler was too large, and in unsatisfactory heating when it was too small, a mistake easily prevented.



AMERICA FORE LIFE INSURANCE BUILDING, CHICAGO

*Leonard Construction Co., Architectural Engineers**John Degan, Inc., Plumbers*

Equipped with "Clow Throughout"

The equipment supplied by Clow includes: 72 M-3160 Wall-hung Closets; 50 M-3164 Wall-hung Closets; 13 M-3219 Closets; 78 M-4015 Lavatories (on Clow Concealed Wall Hanger); 29 M-4020 Lavatories; 48 M-3480 Urinals; 58 M-5125 Adamantose Slop Sinks; 2 Showers; 4 M-4850 Sinks.

The America Fore Building is one of the large high-class office buildings recently completed in Chicago. It covers the block bounded by Rush, Pearson and Cass Sts., in the new business section opened by the Boulevard Link. To the right of the picture is shown a spire of the magnificent Quigley Seminary, in which is a fine installation of a Clow R-U-V Water Sterilizer.

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Manufacturers' Catalogs and Business Announcements

THE POWERS REGULATOR CO., Chicago. "How to Prevent Scalding and Repair Troubles in Shower Baths."

In establishments such as hotels, hospitals, and clubs of many kinds in which there are large numbers of shower baths, it is often found that considerable discomfort and sometimes actual suffering are caused by sudden and unexpected changes in temperatures of water being used. Many a bather has adjusted the water temperatures until they are just right and stepped under the shower, but perhaps other nearby showers are being used, and as their water is turned on there often comes a sudden drop or rise in the water temperature, and the bather may receive a quick shot of cold or scalding hot water, the result if the bather has a weak heart being sometimes disastrous. One large hotel in New York is said to have recently paid large damages for the death of a guest scalded by a sudden torrent of hot water, caused by use of the wrong fixtures.

This, of course, is prevented by the use of valves of the proper kind. There are four essentials of an ideal mixing valve: (1) It should conveniently mix hot and cold water, and maintain the shower at the temperature desired by the bather; it should be absolutely scald-proof. (2) It should control and equalize the changing water pressures. (3) Its cost should be reasonable. (4) It should be sturdily built and have few parts to get out of order.

This brochure presents letters from managers of many clubs, hotels, and institutions of different kinds in praise of the valves made by the widely known Powers Regulator Co., by using which water temperatures are maintained at any degree a bather desires, and discomfort and accidents are prevented.

THE ATLANTIC TERRA COTTA CO., New York.
Atlantic Terra Cotta; Printed Monthly for Architects.

Modern architecture of almost every kind owes much to the manufacturers of terra cotta. This adaptable material by reason of its moderate initial cost, its extreme durability, and the fact that it may be given highly decorative qualities in which beauty of color supplements excellence of form is naturally in wide and continually increasing use, and a monthly publication issued by this large firm of terra cotta manufacturers is devoted to the illustration and description of certain notable recent installations of terra cotta in different parts of the country.

One recent issue of this little publication deals with a restaurant structure at Coney Island of which Dennison & Hiron are architects, a building of stucco, elaborate and beautiful use of terra cotta being seen in capitals of columns, in arches and soffits, window boxes, the roundels which are placed in the spandrels of the arches and between certain round-topped windows, and particularly the details about the oval windows set in the pylons at the corners of the structure. The location of the restaurant pavilion, near the water's edge, probably suggested

the use of designs showing sea life in many forms as decorations,—Venetian galleons, Elizabethan ships, Neptune, his trident, shells, fish, lobsters, snails, etc., and the most lavish decoration is about the afore-said oval windows where all these and other emblems are massed, combined with the "dripping water" motif, worked out with lavish use of colors and gold, all this contrasting pleasantly and richly with the gray of the rough-cast stucco walls.

MINNEAPOLIS HEAT REGULATOR CO., Minneapolis.
"The Heart of the Heating Plant." Heating the Home.

Difficulty and uncertainty of securing prompt deliveries of some kinds of fuel and the high costs of fuel of any kind render it necessary to practice due economy in their use. Then too it has been found in buildings of every kind, from the smallest residence to the largest office, apartment or manufacturing structure, that by careful and conservative operation of the heating plant it is quite possible to increase the comfort of the occupants while promoting the economy which is so desirable. It is easy to see that by the use of anything which promotes economy and adds to comfort every desirable end is served, and this is done when advantage is taken of the various appliances which the ingenuity of manufacturers has devised for use with heating systems.

In this booklet or brochure, issued by a firm which is among the leaders in its field, there are illustrated and described a large number of appliances for heat regulation. For example there is the now well known Minneapolis Heat Regulator, rendering the service which its name implies, and adaptable to any type of furnace or boiler, including various types of closed systems of hot water heating, vapor boilers with different kinds of pressure regulators, diaphragms, etc. Other appliances supplied by this firm and illustrated and described in this booklet are room thermostats, eight-day thermostats, one-day thermostats, pressurestats, motors of different kinds, valves, and a wide assortment of accessories. The firm maintains a service department equipped to advise architects and engineers as well as to render help in other ways, and in this brochure the services of this department are offered to those who require them. The work is invaluable to architects and engineers and should be found in every library.

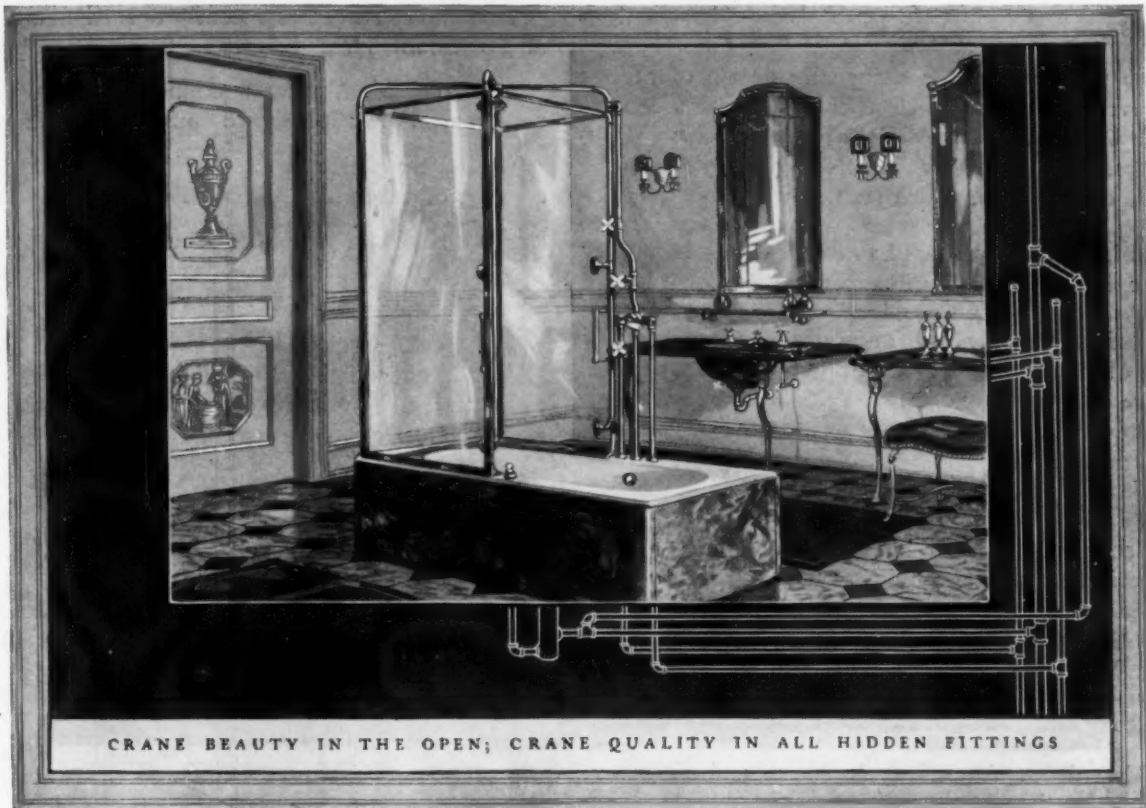
VAN RENSSELAER P. SAXE, C.E.

Consulting Engineer

**STRUCTURAL STEEL
CONCRETE CONSTRUCTION**

Knickerbocker Building

Baltimore



An inclosed shower bath, lighted, ventilated, free from clinging curtains, yet entirely splash-proof, has long been the ideal of discriminating home makers. Costly built-in construction seldom results in the perfect comfort desired.

The Crane *Crystal* shower satisfies the most exacting standards of beauty, luxury and convenience. Plate glass incloses three sides. Four horizontal sprays supplement the overhead needle spray. In

combination with the *Tarnia* bath, no more space is required than for an ordinary tub. They can be installed in the most interesting of all settings, in the open, away from walls and corners. Plaster or tiles may replace the black and white marble encasing the *Tarnia* above.

Crane plumbing and heating materials, sold by contractors everywhere, include fixtures within reach of all. Write us for "The New Art of Fine Bathrooms."

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Crane long turn elbow with cleanout

Manufacturers' Catalogs and Business Announcements

THE BRYANT ELECTRIC COMPANY, Bridgeport, Conn.
"Superior Wiring Devices." Their Rapid Development.

So frequent are the changes in design of fittings of every kind used in electrical work that architects and builders, and possibly even electricians themselves, have difficulty in keeping abreast of the changes. A detail which seemed when it was introduced to be perfection soon gives way to another.

This carefully prepared and well presented catalog is replete with illustrations and data covering all the vast number of fittings made by this well known manufacturing concern, and its helpfulness in any one of many ways would entitle it to a place in the office of every architect, engineer or builder who is interested in the latest and most approved practice.

ANNOUNCEMENTS

George P. Turner has opened offices at 1420 American Trust Building, Birmingham, Alabama. Manufacturers' samples and catalogs are desired.

Roy G. Pratt is occupying new offices in the Franklin Trust Building, 15th and Chestnut Streets, Philadelphia. Manufacturers' samples are desired.

Edward M. Adelsohn, Architect and Engineer, announces the opening of new offices in the Municipal Bank Office Building, Pitkin and Stone Avenues, Brooklyn.

Ernst W. Nietz, Jr., Construction Engineer, has recently opened offices at 187 Wyoming Avenue, Wyoming, Pa. He would be glad to receive catalogs and other advertising matter from manufacturers.

I. Albert Baum and Jefferson M. Hamilton announce the formation of a partnership for the practice of architecture under the firm name of Baum & Hamilton, in the Columbian Tower, Memphis.

The firm of Moloney & Hallahan having been dissolved, Henry J. Moloney, formerly with Welles Bosworth, Clinton & Russell and the Thomas M. James Co., will continue practice at 342 Madison Avenue, New York.

Harry J. Brumenshenkel announces that J. Leonard Rush, formerly connected with Vernon Redding and Associates, is now associated with him in the general practice of architecture at 42 Park Avenue, Mansfield, Ohio. Catalogs and samples are desired.

Clare C. Hosmer, for the past two years the Managing Director of the Chicago Architectural Exhibition, has become connected with the Martin Studios, Sarasota, Florida. The organization is now known as the Martin-Hosmer Studios, Inc., with offices at Sarasota and Ft. Myers, Florida. Catalogs and samples of manufacturers and dealers are desired.

Arthur G. Tafel has recently opened new offices at 140 South Third Street, Louisville.

Raymond M. Marlier announces the opening of new quarters in the Empire Building, Pittsburgh.

W. A. Schabel and A. J. Grimm announce the opening of offices at 335 Erie Building, Cleveland.

Fred B. Klein announces the opening of offices for the practice of architecture in the Commercial National Bank Building, High Point, N. C.

Ernest A. Grunsfeld, Jr., and Eugene Henry Klaber announce the opening of offices at 81 East Madison Street, Chicago. Manufacturers' catalogs would be appreciated.

The firm of Happ & Shelverton having been dissolved, Frank R. Happ will continue the practice of architecture in the offices formerly occupied by the firm in Macon, Georgia.

McCarter & Nairne, Architects and Structural Engineers, 509 Richards Street, Vancouver, B. C., would appreciate receiving catalogs and other printed matter from manufacturers.

William Koehl announces the association with him in the practice of architecture of Antonio Di Nardo, the firm being known as Koehl & Di Nardo with offices in the Park Building, Cleveland.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF THE ARCHITECTURAL FORUM,
 Published Monthly at New York, N. Y., for October 1, 1924.

State of New York, County of New York, ss:
 Before me, a Notary Public, in and for the State and County aforesaid, personally appeared Robert Sweet, who, having been duly sworn according to law, deposes and says that he is the business manager of THE ARCHITECTURAL FORUM and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager, are:
 Publisher—Rogers & Manson Co., 383 Madison Avenue, New York, N. Y.
 Editor—Parker Morse Hooper, New York, N. Y.
 Managing Editor—None.
 Business Manager—Robert Sweet, New York, N. Y.

2. That the owners are:
 Rogers & Manson Co., 383 Madison Avenue, New York, N. Y.
 Stockholders holding 1 per cent or more of the total amount of stock:

Estate of Albert J. MacDonald, Holbrook, Mass.
 Howard Myers, Bronxville, N. Y.
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 Robert Sweet, New York, N. Y.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

ROBERT SWEET,
 Business Manager.

Sworn to and subscribed before me this 9th day of October, 1924.
 (Seal) WILLIAM A. LOW,
 (My commission expires March 30, 1925) Notary Public.



The OLYMPIC HOTEL, Seattle, Wash.: Geo. B. Post & Sons, New York, Architects; Seattle Plumbing Supply Co., Jobbers; Ashwell & Twist, Seattle, Plumbers

KOHLER

And the OLYMPIC HOTEL

One of the finest hotels on the Pacific slope—the Olympic—is nearing completion in Seattle.

This impressive hotel will have Kohler "Viceroy" built-in baths in 549 of its 609 bathrooms (other bathrooms being equipped with shower baths only).

* * *

The selection of Kohler Enameled Plumbing Ware for the Olympic and other installations of the first importance reflects the favor which this ware has won with architects through its beauty of design and the durability and uniform whiteness of its enamel.

The mark "Kohler, U. S. A.," unobtrusively fused into the enamel of every Kohler fixture, betokens the maker's pride in a worthy product.

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MANUFACTURERS OF ENAMELED PLUMBING WARE AND KOHLER AUTOMATIC POWER AND LIGHT 110 VOLT D. C.

Manufacturers' Catalogs

THE ATHEY COMPANY, Chicago. "Athey Weatherstrips." An Invaluable Aid to Economical Heating.

Reliable and economical heating is not entirely a matter of using sufficient fuel in a system which is of the best and which is equipped with all the devices which make for excellent service while promoting economy. Much depends upon devices for excluding the cold, and chief among such devices is the weatherstrip which prevents the entrance of strong currents of air through the crevices between window sash and the frames in which they are held.

The same skill which has been devoted to perfecting other details of equipment has been directed toward perfecting the weatherstrip, which now appears in a form which represents efficiency itself. Ordinary, so-called weatherstripping keeps out very little of the cold air, dust, dirt, soot and noise. If fitted too tightly, the window sticks and is hard to operate; if applied in any other manner the windows rattle; it is unsightly and a constant annoyance and expense.

Since the days of the old wood and rubber weatherstrip there have been many improvements, but perfection was to be attained only by study and experiment, and to this concern, long known for the excellence of its output, belongs the credit for continuing research and experiment until it was possible to offer to the building public the Athey Cloth-Lined Metal Weatherstrip, described in this folder.

This equipment consists of a metal (zinc) rail, shaped with a tongue or sealing rib at a right angle to the base, in the back of which is inserted a strip of cloth; this rail is placed in the runway of a window and fastened in place, the cloth in back of the rail preventing any back leakage. In a groove made in the edge of the sash is placed a metal cloth-lined channel, securely fastened in place and in the cloth-lined channel the tongue or sealing rib of the rail operates easily, maintaining at all times a perfect contact. Dampness cannot pass it. It is therefore a great boon to rheumatic sufferers and others affected by dampness and humidity; it is now in use in many of the leading hospitals throughout the country for this and other reasons.

Drafts are impossible from windows equipped with it, and no soot or dust of any kind can find its way through. It is the only equipment that is successfully used in the southwestern section of the country, where dust storms are of frequent occurrence. Wherever soft coal is used the value of Athey Cloth-Lined Strip is apparent, for there are no crevices for the soot to work through. The housekeeper knows what this means to the hangings and draperies.

From an economical standpoint, it is an investment (not an expense), for extensive experiments have shown that considerably less radiation is required, and radiation means fuel consumption. The saving in cost of fuel will soon pay for the Athey strip.

In a large building on Chicago's lake front, the installation of Athey Cloth-Lined Metal Weatherstrips saved 572 tons of coal in one heating season. At an average of even \$6 a ton for coal that means a saving of \$3432. Yet the cost of installing the Athey strip was less than \$5000. The name of this building, and the engineer who furnished this data will be given anyone interested upon request.

THE ABERTHAW COMPANY, Boston. "Factory Floor Surfaces." An Excellent Work on Floor Construction.

In the designing and planning of an industrial structure the architect and builder may well devote considerable care and thought to the problem presented by the floors. The wear and tear which many manufacturing processes and forms of industry cause to the floors of industrial structures necessitate the installation of the floor best adapted for such use, and of the utmost importance are the welfare and comfort of the workers or operators, so large a part of whose lives is spent in such a structure.

In this little book A. B. MacMillan, Chief Engineer of the Aberthaw Company, discusses the uses of different types of flooring. Floor surfaces divide themselves into three main classes,—(1) wood; (2) granolithic; (3) special materials or proprietary floorings, and each has its advantages which are here set forth and considered. Mr. MacMillan goes with thoroughness into so important a subject, and discusses methods of manufacture or laying as well as the matter of proper materials or ingredients which compose mixtures of cements, concretes, and similar substances, in all this drawing upon the experience and the store of information and data which the Aberthaw Company has built up during years.

THE NATIONAL LIME ASSOCIATION, Washington. "Hydrated Lime Makes Concrete More Workable. Bulletin 311." A Valuable Work on Lime Properties.

The service rendered by the United States Bureau of Standards is valuable to architects, engineers, builders and others to whom accurate knowledge of qualities is important. Recently there has been issued this bulletin based upon research into some matters concerning lime, done by the Bureau and giving the results secured. Tests were made, and the result as published in this bulletin shows conclusively that hydrated lime naturally improves the workability of concrete without exerting a deleterious effect upon the concrete's compressive strength. Workers in concrete find that while strength is of great importance, it is nearly always necessary that work of this character be also pleasing in appearance, and the appearance of structures of concrete depends largely upon the workability of the mixture. Copies of this valuable little brochure will be sent to those who write requesting them to the National Lime Association, 918 G Street N. W., Washington.

Burnham Building, Chicago
D. H. Burnham & Co., Architects.
O'Callaghan Bros., Plumbers



The equipment supplied by Clow includes:
 79 M-3194 Closets; 516 M-4020 Lavatories;
 1 M-4150 Manicure Lavatory; 36 single M-
 3483 Urinals; 2 batteries of 3 M-3483 Uri-
 nals; 40 M-5140 Slop Sinks.

Equipped with "Clow Throughout"

The Burnham Building, Randolph and LaSalle Streets, Chicago, is one of the principal new office buildings in the business and financial section of the city. In size and character it is an outstanding example of a modern business building furnishing the highest class of accommodations and service.

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CLOW

Manufacturers' Catalogs and Business Announcements

LIBBEY-OWENS SHEET GLASS CO., Toledo. "Flat Glass."
A Work on Use of Glass in Windows.

Use of glass of excellent quality in windows even in buildings of the smallest possible cost is now so general that it seems hardly possible that its use is comparatively recent. In this valuable little volume on the subject we are told that glass was beginning to be used in Rome for windows when Roman civilization was over-run by barbarians from the north of Europe, and that excavations at Pompeii show that glass was used for the windows of certain famous baths. Santa Sophia, built by Justinian in the fifth century, was provided with window screens or frames pierced with openings to receive small sheets of glass, and during the reign of Elizabeth, the great Duke of Northumberland, on leaving his castle, was warned by his steward to remove the glass from its windows to prevent its being stolen.

The present widespread use of glass would seem to be due largely to the study and research of Irving W. Colburn, to whom indeed this work is dedicated. An account is given of his efforts, made in the face of almost insuperable difficulties, which led to the revolution in the manufacture of flat glass as we know it. The little volume contains much which is interesting and valuable as bearing on the historical and technical sides of the subject of window glass.

RUDD MANUFACTURING CO., Pittsburgh. "Multi-Copper Coil Automatic Storage Systems"; "Automatic Storage Systems"; "Automatic Hot Water Service for Small Homes"; "Tank Water Heaters"; "Instantaneous Automatic Water Heater." Various other specialties.

Comfort of the occupants of any kind of a residence structure, and indeed of a structure of almost any sort, is to a great extent dependent upon the facilities which are provided for supplying hot water to bathrooms, lavatories, kitchens, pantries, laundries and departments of many kinds. To meet this demand for heaters of countless different types and as widely varying capacities, certain manufacturers have placed upon the market heaters which will serve economically the tiniest cottage or a hotel, apartment house or hospital where the demands are heavy. Selection of a water heater is important.

In the various brochures, catalogs and other publications named here there is covered completely the line of heaters which this widely known manufacturing firm supplies, a line so complete and well balanced that there could be no demand so small or so large that an appropriate heater could not be promptly supplied to meet the needs. It is particularly interesting to note the part which the thermostat plays in connection with some of these Ruud Heaters. It serves a two-fold purpose,—economy and safety. It means economy in that it proportions the quantity of gas used to the amount of water to be heated, turning off the gas automatically when the water has reached necessary temperature.

THE J. G. WILSON CORPORATION, New York. "Sectionfold and Rolling Partitions; Hygienic Wardrobes."

There are countless instances where it is necessary that a large room of some kind be divided at times into a number of smaller rooms without impairing its value for use as one large room where it is necessary to use it as such. This is frequently the case in hotels or clubs where a large banquet room or restaurant is fully as useful when divided into several private banquet rooms or smaller dining rooms. Such subdivision of space is also frequent in churches, and particularly in schools where an auditorium or assembly room may be used ordinarily for a number of classrooms. Sometimes the cost of heating or lighting a large room is avoided by the simple expedient of converting part of it into a smaller room. In all these instances use is being made of movable partitions,—either of the type which when not in use can be folded back against the wall or into wall pockets, or of another type which when not in use can be rolled up.

This brochure fully describes and illustrates the movable partitions of both types made by the J. G. Wilson Corporation. Every detail of data which could be desired by an architect or builder is given, and the mechanism of both types is indicated in diagrams, while in many illustrations there is fully demonstrated the important fact that the use of these partitions in no wise injures the appearance of the rooms where they are used.

Quite as important to a school as movable partitions are the wardrobes which are used for containing the children's clothing. It has been found in some instances that having wardrobes in the schoolrooms rather than in separate rooms is more economical of floor area. When desired such wardrobes may be connected with the ventilating system of a building. Like the movable partitions, the doors of such wardrobes may be arranged to operate in various ways,—in usual door fashion or built to disappear into the wardrobes; or instead of doors the wardrobes may have fronts which fold or roll as do the partitions. The wardrobes made by the J. G. Wilson Corporation are fully as well and favorably known as the partitions made by the same concern, and this brochure gives all details necessary for their use.

VAN RENSSELAER P. SAXE, C.E.

Consulting Engineer

**STRUCTURAL STEEL
CONCRETE CONSTRUCTION**

Knickerbocker Building

Baltimore

IN the Tribune Tower, the "world's greatest newspaper" is seeking to give America its most beautiful office building. The hundred thousand dollars invested in the Tribune architectural competition indicate how far the owners were willing to go in order to find worthy architects.

They were equally as scrupulous in the choice of materials of construction and equipment. In every detail, they sought to preserve the spirit of dignity and fortitude of their newspaper. Cost was not their first consideration, yet the conservative policy of the Tribune forbade lavish expenditure.

The unanimous decision of both owner and architect on Crane plumbing and heating materials is a recognition of Crane quality which is deeply appreciated. To create fixtures, valves and pipe fittings which appeal through their quality, charming designs and economy of lasting service, is ever the rule and guide of Crane design and manufacture.

Tribune Tower, Chicago. Architects, Howells and Hood; General Contractors, Hegeman-Harris Co.; Plumbing Contractors, E. Baggot Co.; Heating Contractors, Mehring and Hanson.

CRANE

CRANE CO., 836 SOUTH MICHIGAN AVENUE, CHICAGO
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Manufacturers' Catalogs and Business Announcements

NATIONAL STEEL FABRIC CO., Pittsburgh. "Reinforced Concrete Sidewalks, and Cellar and Garage Floors." Important and Valuable Data on Concrete.

Notwithstanding the great value of concrete for laying driveways, sidewalks and the floors of garages and cellars, it is of course open to the objection that as generally used it often cracks and breaks easily, particularly when exposed to rain which, when it has turned to ice, has a tendency to cause cracking. Concrete has great compressive (crushing or wearing) strength, but like glass it is deficient in tensile (breaking) strength, having only about 1/150 the tensile strength of steel. It was found many years ago that in order to obtain from concrete the utmost possible in the way of structural utility the material must be suitably reinforced, and the wide and constantly increasing use of concrete is due in large measure to the skill of engineers in designing systems of reinforcing.

The use of steel in reinforcing an actual structure of concrete is of course well understood, but the application of much the same principle to strengthening concrete roadways and floors has been slower to develop. The same principle applies, nevertheless, and in this folder illustrations and diagrams explain the use of National Steel Fabric which is laid upon the first layer of concrete, acting as strong reinforcement to the upper layer. The cost of this reinforcement could add but little to the expense of constructing any work in which it would form part, but it more than pays for itself by adding years to the life of a floor or roadway and by the prevention of unsightly breaks and cracks. The use of the fabric presents no problem which the average concrete worker could not master, the illustrations and directions for use given in this folder, in fact, being full and complete and easily followed.

THE NORTON COMPANY, Worcester, Mass. "Norton Floors." A Booklet on Non-slipping Surfaces.

Someone observed recently that the amount of money paid out annually by many a large concern in the form of damages for personal injuries due to slipping and falling would more than pay the cost of preventing any outlay for such injuries for all time to come. Many of the substances likely to be much used for flooring present surfaces which are dangerously slippery, particularly when wet, and it is highly important to use for the treads of stairways, for ramps, areas about elevators or machinery, some material which is not only not slippery to begin with, but which will not become so when wear has worn away the original surface and made the material smooth.

This brochure fully describes the flooring material produced by this well known concern. The first Norton Floor was known as "Alundum Safety Tile." It was so successful in solving the problem

of slippery and fast-wearing stairs in places where there had been a hazard that further developments followed. Now there are Norton Floor materials with a non-slip surface suitable for all kinds of buildings, including the highest type of hotel, municipal and office structures, where this product is used in connection with marble, granite, tile and similar building materials.

The principal classifications of Norton Floor products are: Alundum Floor and Stair Tile (semi-vitreous); Alundum Ceramic Mosaic Tile and Treads; Alundum Aggregates; Alundum Aggregate Tile and Treads, and each of these products is described briefly in this booklet.

PITTSBURGH PLATE GLASS COMPANY, Pittsburgh. "Glass and Paints." Their History and Use.

In a carefully written and richly produced volume this firm, one of the foremost among the leaders in its field, issues a treatise upon two materials which, perhaps because they have much in common, are closely associated in the public mind—glass and paint. Unless one had made a study of glass it would hardly be supposed that its history reads like a romance from the Arabian Nights; use of glass in one form or another is enormously old, and each of the many varieties of glass demands study of a matter which is a subject entirely to itself. The particular branch of glass manufacture carried on by the Pittsburgh Plate Glass Company rewards any amount of study which may be given to it. So, too, with paint, without which the modern world would be colorless.

This valuable volume deals not only with the history of glass and paint and the methods of their manufacture, but goes with equal fullness into a description of all the products made by the firm—glass, paints, varnishes and many kinds of brushes.

ANNOUNCEMENTS

G. H. Carsley, Architect, announces the opening of new offices at 634 Mound Street, Helena, Mont.

Talmage C. Hughes has opened new offices for the practice of architecture at 2615 Joy Road, Detroit.

John Noble Pierson & Son, Architects and Engineers, announce the opening of new offices at 200 Jefferson Street, Perth Amboy, N. J.

Alexander Fraser Rose, Engineer and Architect, announces his removal to 510 Essex Building, Minneapolis. Catalogs and samples of manufacturers are desired.

Thomas J. Collopy has opened an office for the practice of architecture at 607 Coppin Building, Covington, Ky. Manufacturers' catalogs and other publications and samples of materials are desired.

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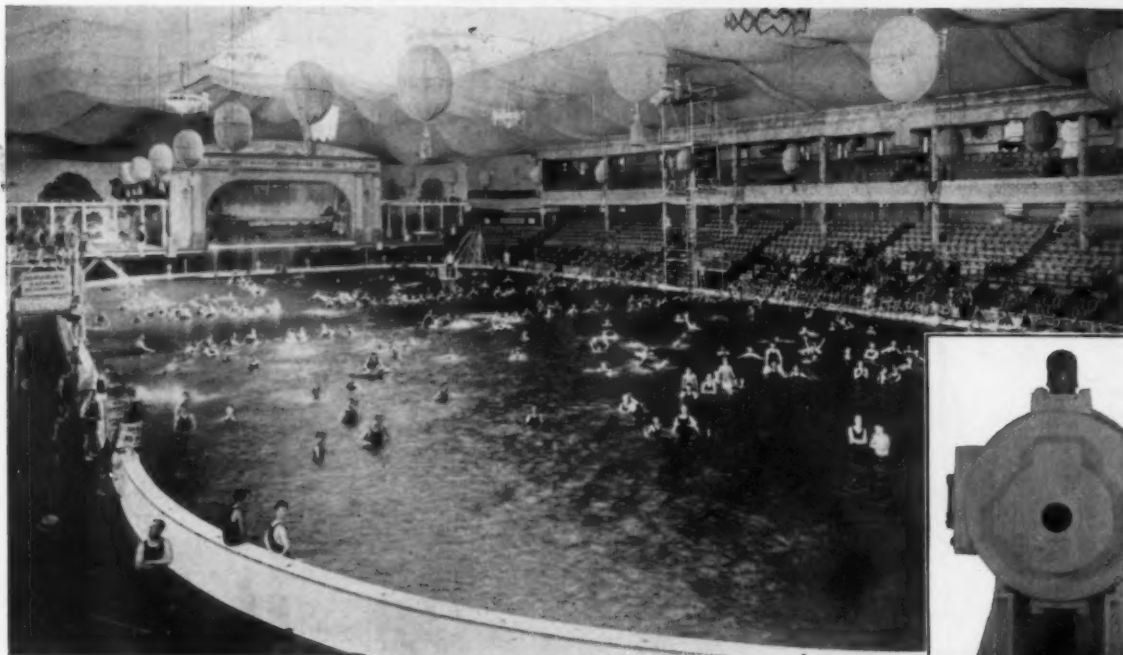
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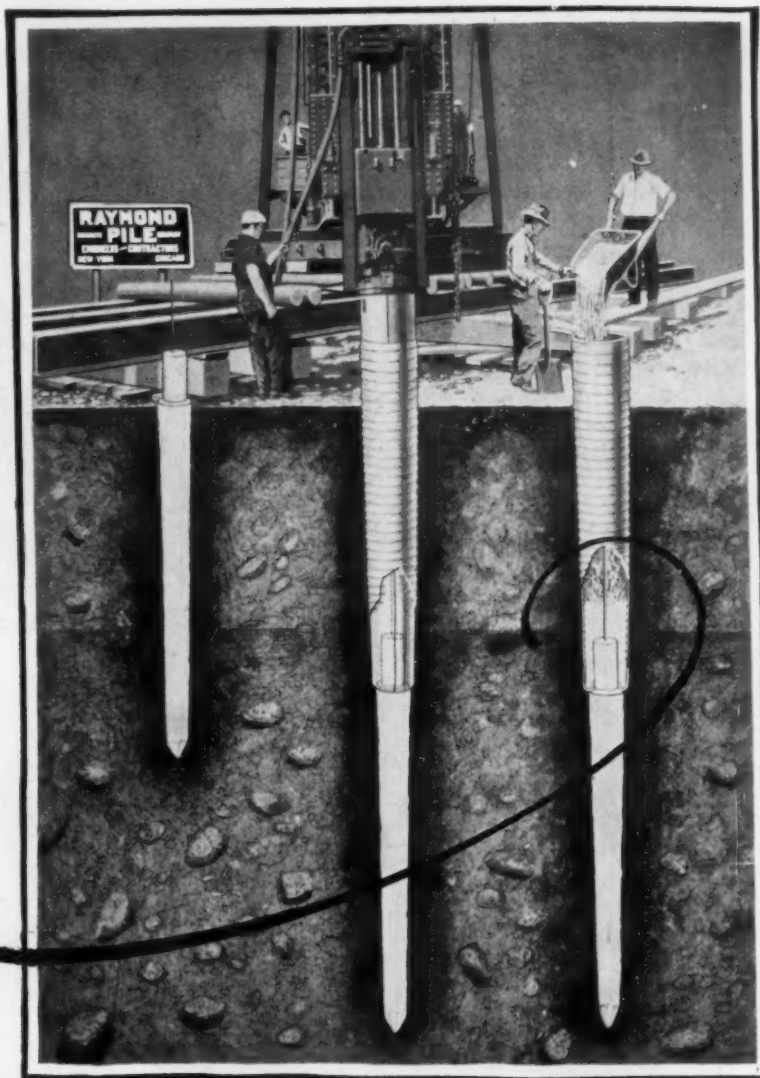
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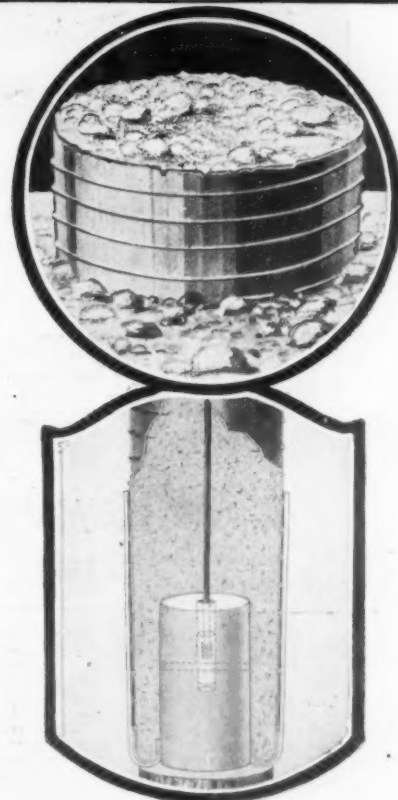
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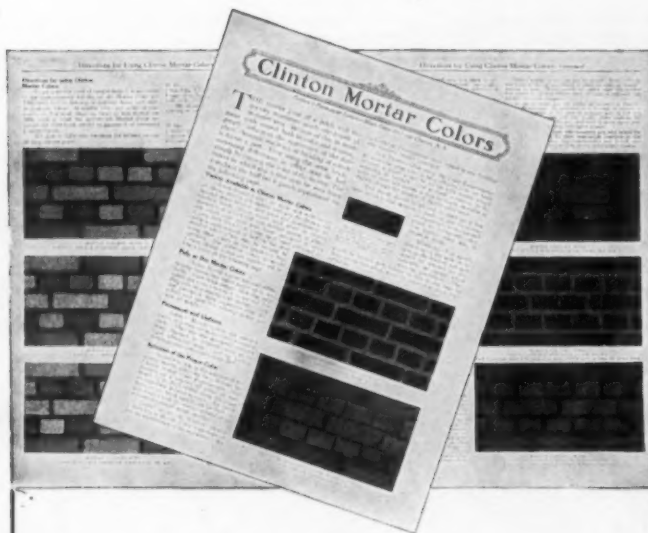
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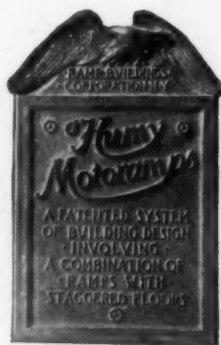
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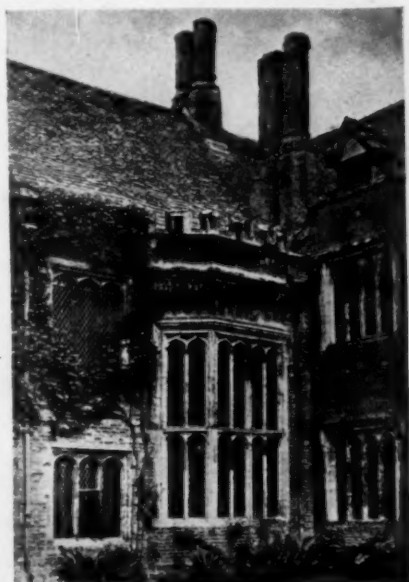
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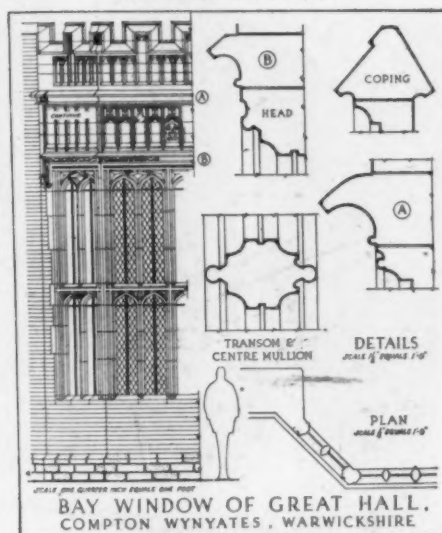


BAY WINDOW OF GREAT HALL,
COMPTON WYNNYATES, WARWICKSHIRE

Although the scene and stains of centuries have discolored the patterns in the brickwork, they add beauty to the color of the walls.

24

TUDOR BRICK DETAILS



CERTAIN parts of this fine old country house have been standing for almost 400 years. Built in rambling fashion, it constitutes a picturesque mass of rarely beautiful coloring. The walls of small red brick with wide mortar joints, are relieved by diaper

which are subtly worked out in brick of a blue tone. Added to the richness of the brick walls themselves there is the color of the moldings and facings in yellow stone, the woodwork of various gables now black with age and roofs of lichen-covered slate.

25

Reproduction of two facing pages in "English Precedent for Modern Brickwork."
The illustration shows the character of the halftone plates and measured drawings shown in the book.

A NEW BOOK FOR THE DRAFTING ROOM

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The book is especially timely since much of the best present-day American brickwork finds its inspiration in English precedents.

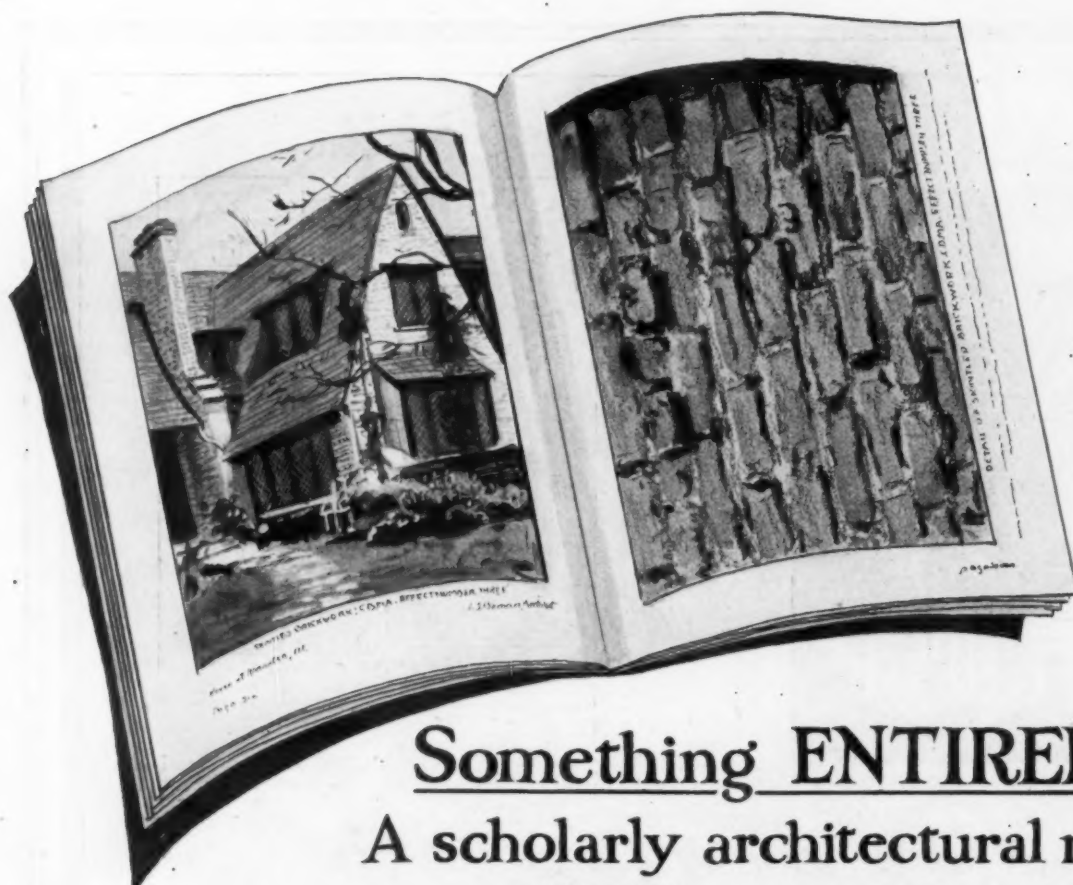
Among the subjects discussed in the book are: "An Appreciation for English Brickwork," "Chronology of English

Brickwork," "Tudor Brickwork," "Georgian Brickwork," "American Brickwork," "English Rubbed, Cut, Moulded Brick and Their American Counterparts," and "Bonds and Mortars in English Brickwork."

The text is illustrated by 43 halftone plates and 28 measured drawings. The colored frontispiece is by Otto Eggers.

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BRICKWORK WORKING DETAILS

VOLUME I ~ NUMBER I

"Skintled Brickwork"

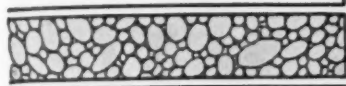
New methods of obtaining interesting surface effects with common brick as developed and exemplified by Chicago architects

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Armstrong's Linoleum

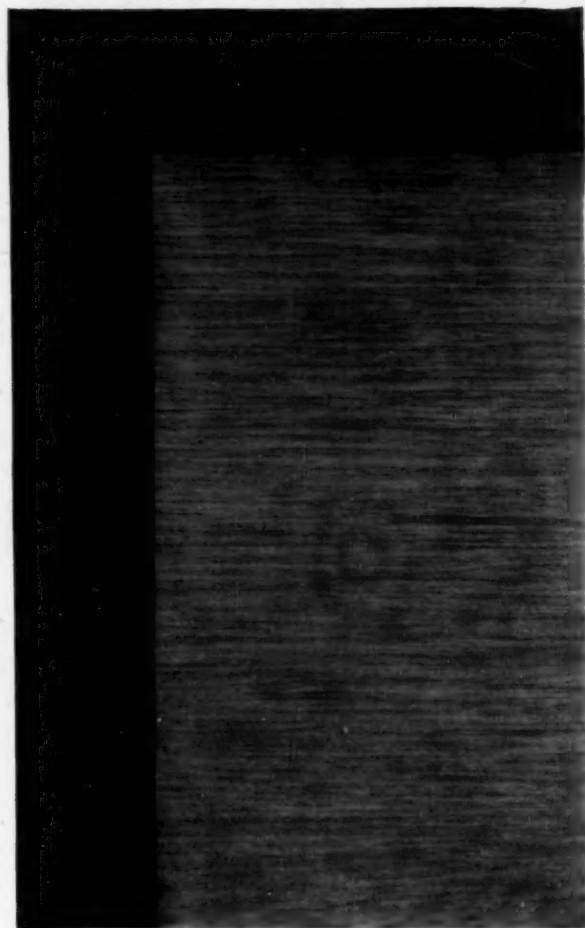
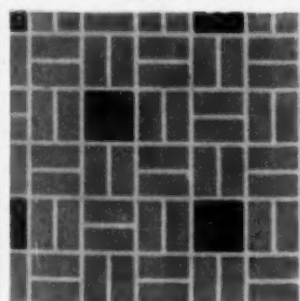
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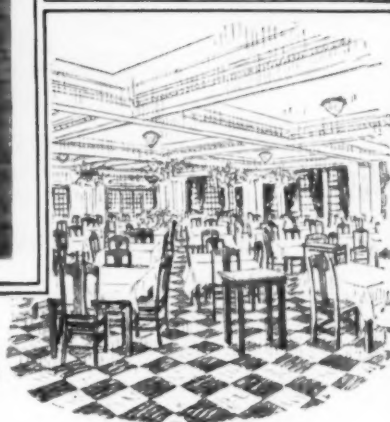
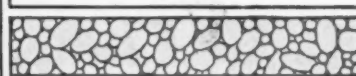
No. 5064 Moulded Inlaid



Field of Light Gray Jaspé No. 13 with Border of Black No. 27



Blue Jaspé—Color No. 18



COLOR OPPORTUNITIES IN FLOORS

THE new linoleum, "for every floor in the house," shown here is Armstrong's Jaspé, light gray, No. 13. Into the jaspés go varying tones of a single color, to produce this pleasing effect of dull jasper.

Jaspé linoleum in neutral two-tone grays is a good foundation for color schemes of living-rooms, dining-rooms, and bedrooms. How much more harmonious with tinted walls of pastel greens, for instance, or creams or blues or grays is this jaspé than floors of shiny yellow or monotonous brown!

You can add to the beauty and distinction of jaspé floors by surrounding them with borders.

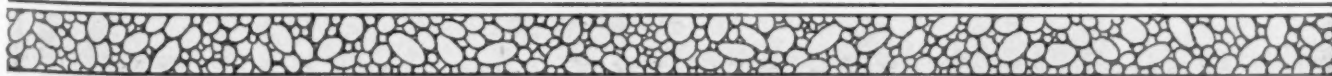
The plate pictures a border of black linoleum, color No. 27. Your decorative plan may call for a border of blue or green or plain dark gray. There are other jaspé colors, too—blue, green, dark gray, light brown, and dark brown. Thus you see the unusual color possibilities of the modern linoleum floor.

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able in cost because its huge production is obtained by time and labor saving quarrying and milling methods, and the utilization of all waste. The result is that the many colors of Appalachian marble are used in Iowa and all other states, in Canada, in Europe and in South America.

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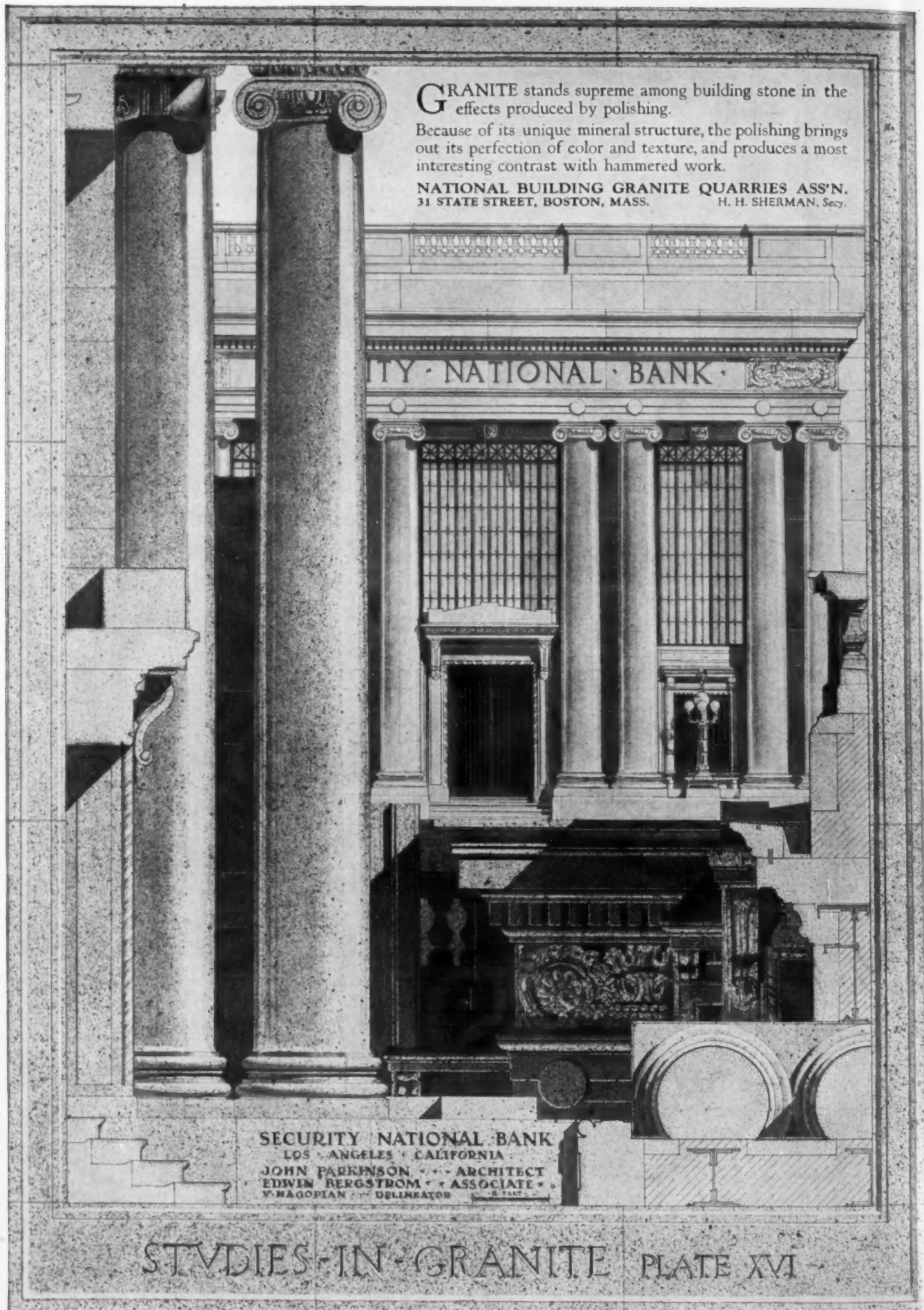


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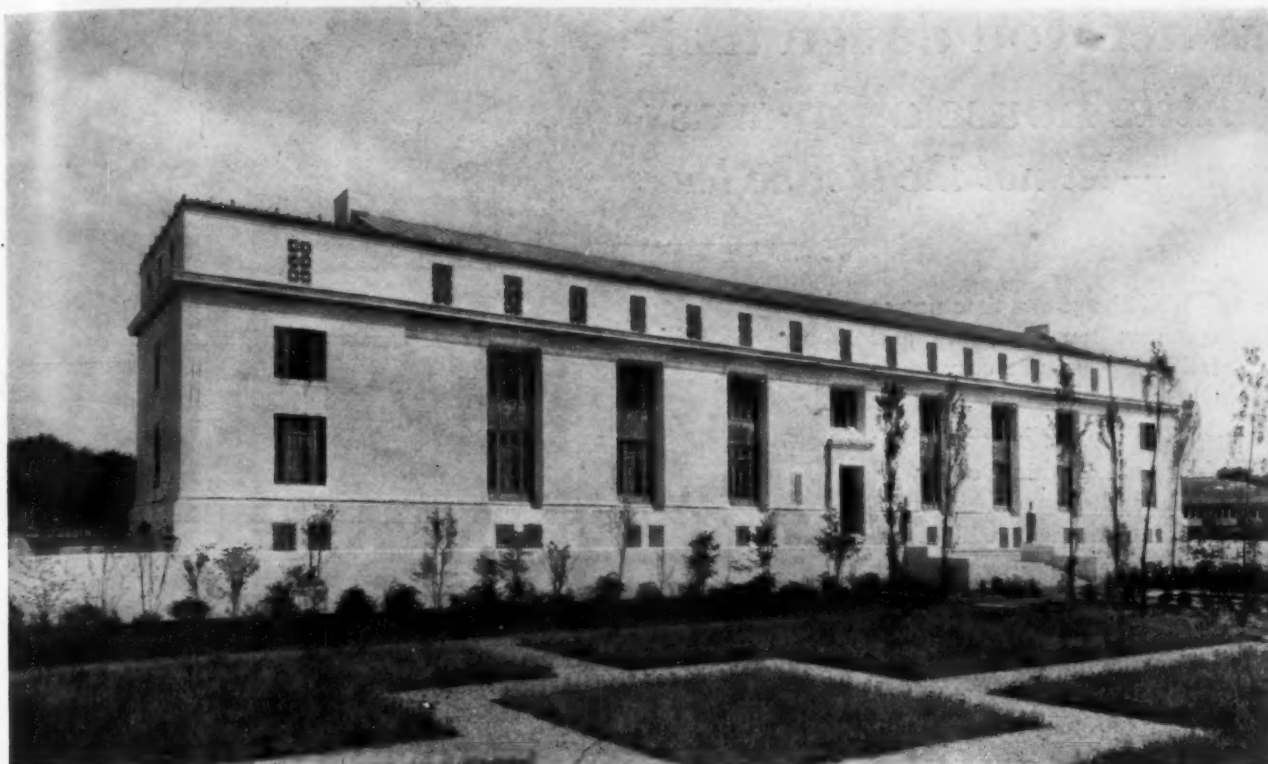
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They talked things over well—joyously discussed their future home into the wee sma' hours. One day they proudly viewed the finished plans. They were *good* plans for a *good* home—what one expects and gets from a *good* architect.

And so, the work began. Day by day the house arose in all its beauty—nearer and nearer came the completion of their happiness. At last they stood on the hill and viewed their "little house o' dreams"—created.



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And then one day, they came to the last thing on the list, and being last they thought it least—the hardware. They thought "we'll save on the hardware—it's not so important." To the admonitions of their architect they answered "No". To the experience of their contractor they lightly snapped a finger.

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simply didn't work without a fuss. The key would stick. The knobs came loose and horror of horrors, the bright brass passed away. Rust and worn spots took its place.

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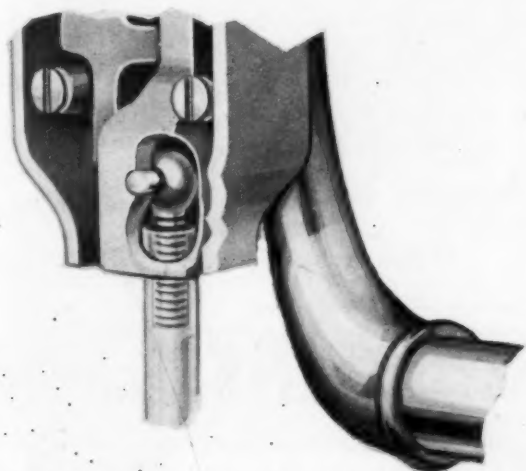
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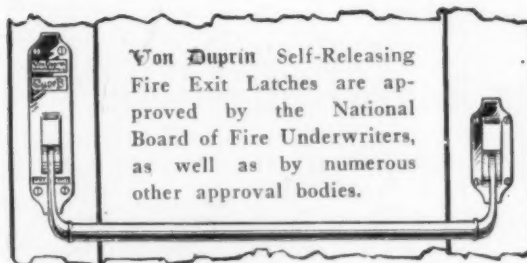
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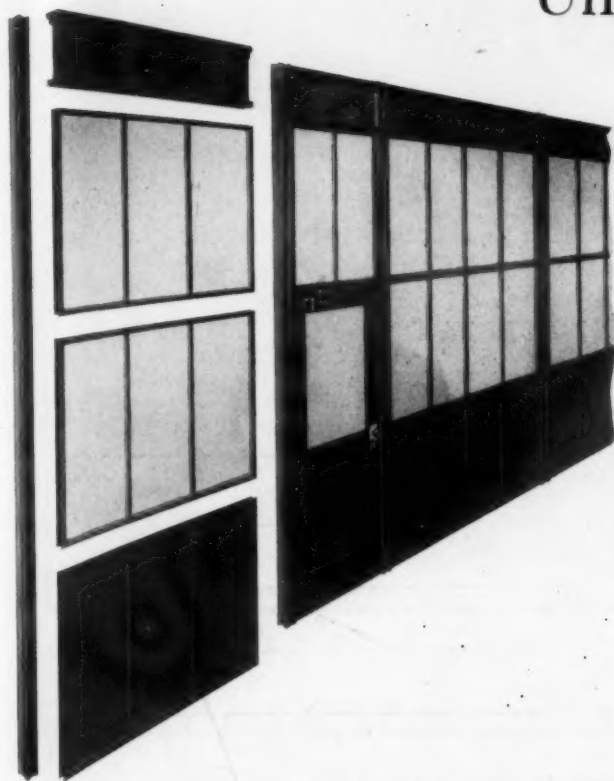
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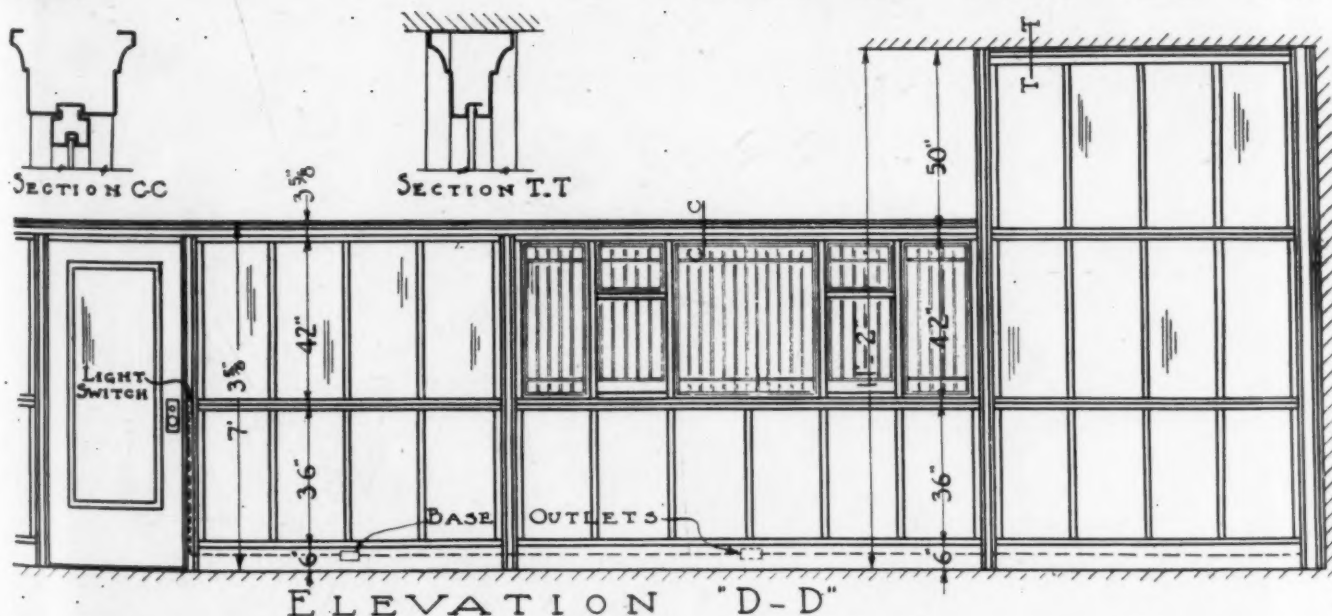
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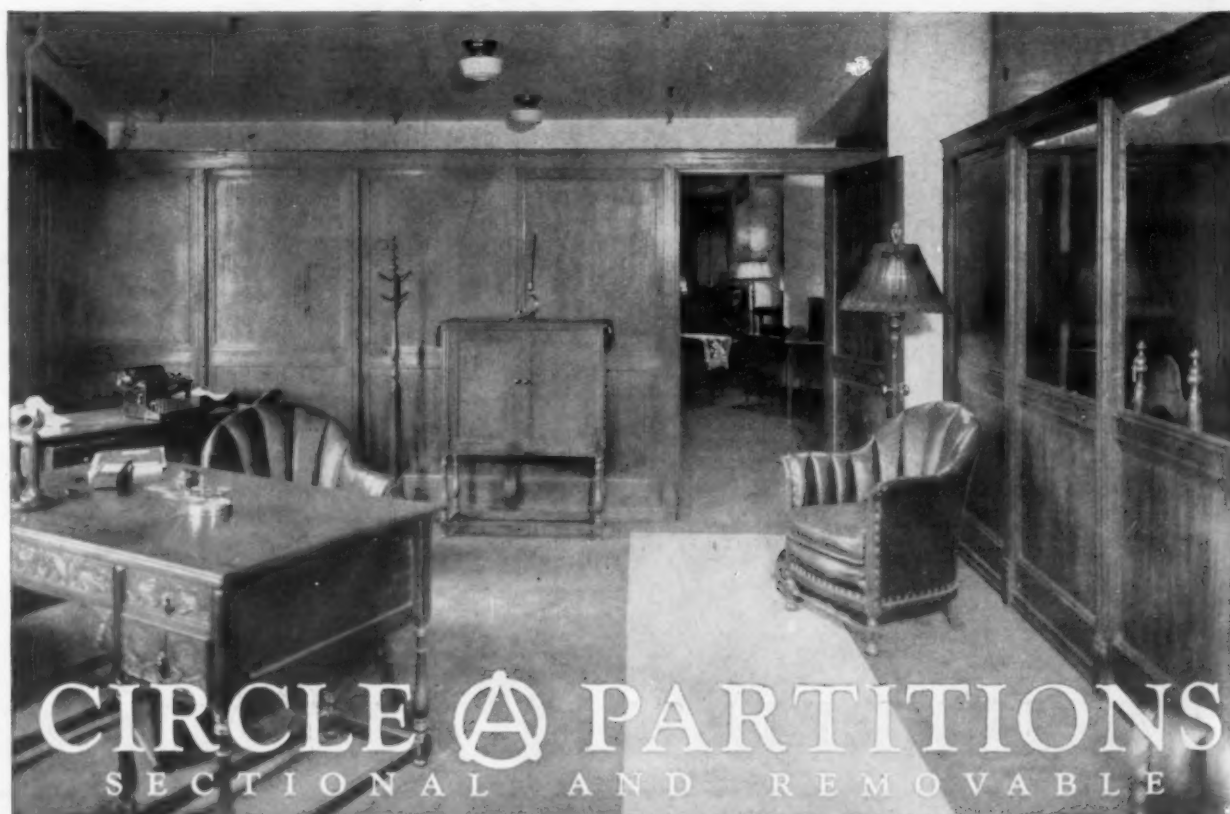
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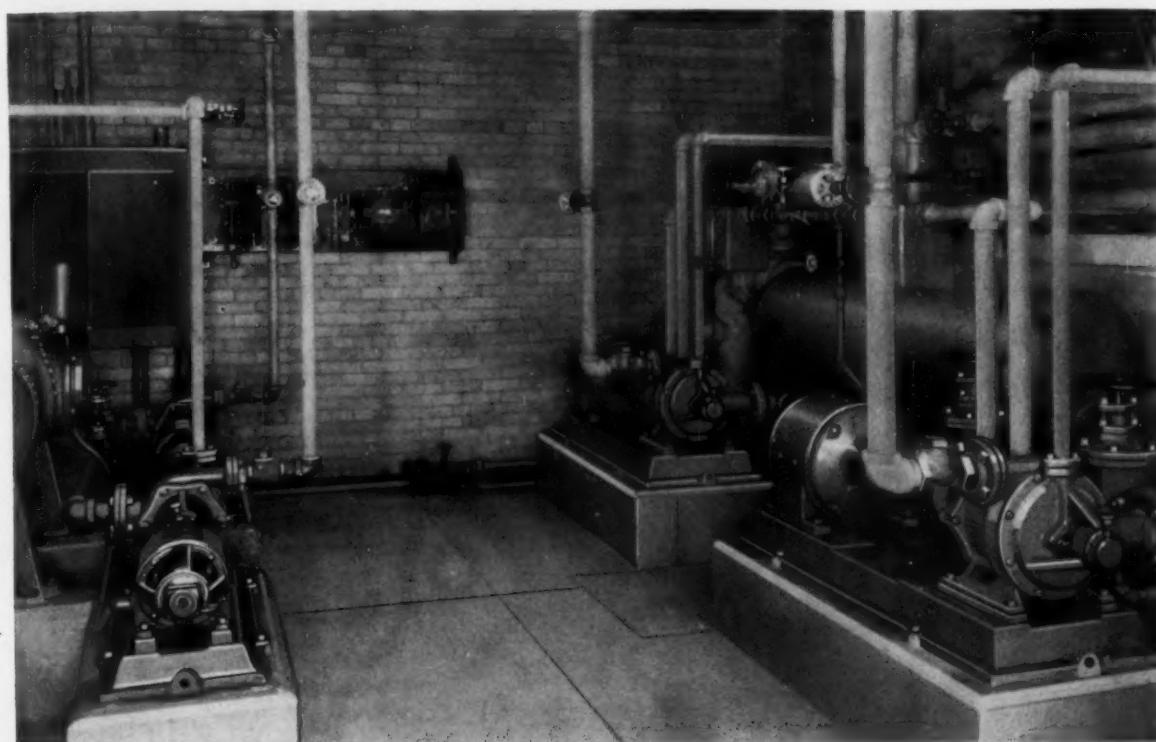
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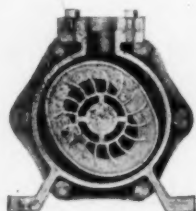
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THE ARCHITECTURAL FORUM

VOLUME XLI

NUMBER 6

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Opening of American Wing at Metropolitan Museum

PARKER MORSE HOOPER, Editor

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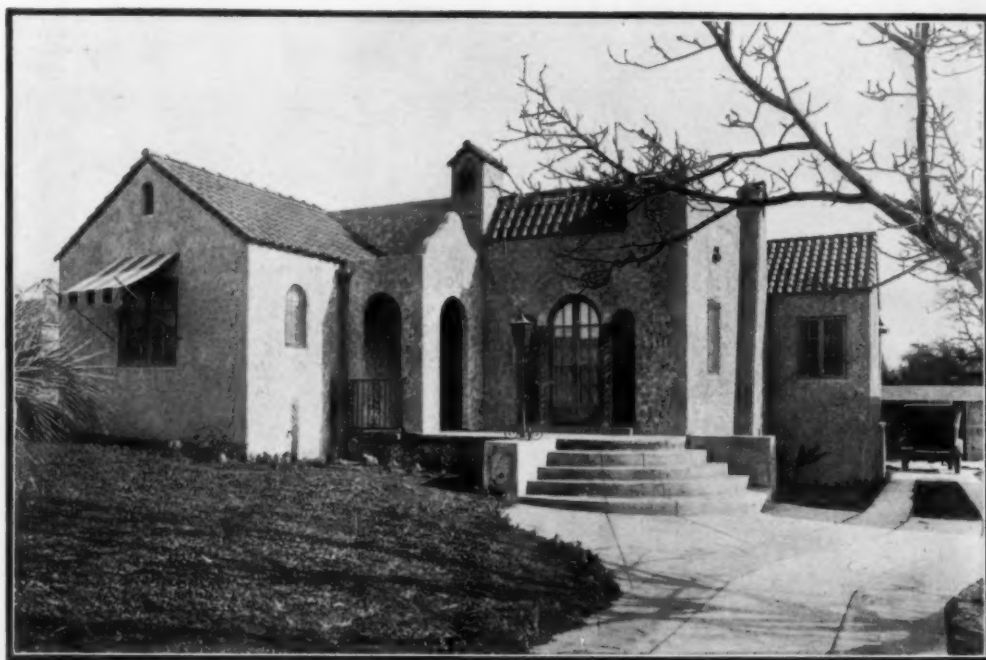
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Antiques



An interesting Hepplewhite set consisting of two arm chairs as illustrated above and four side chairs.

ONE fascination of the antique is the speculation which it arouses as to its origin and history. Some of our pieces have a well-defined past. Concerning others, however, very little is known. In every instance, however, we vouch for their authenticity.



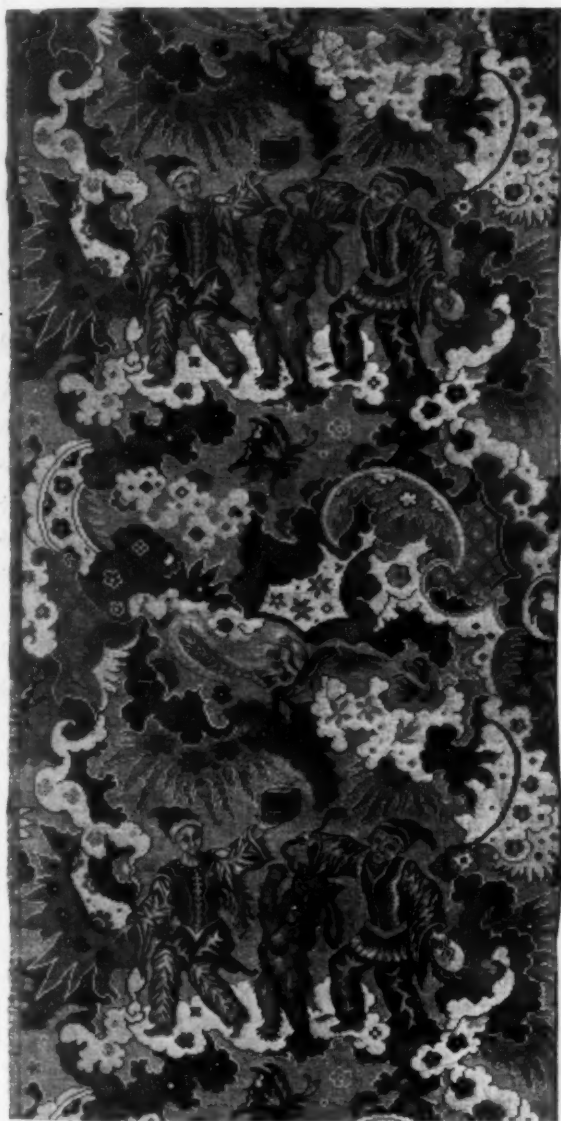
521 MADISON AVENUE

Between 53rd and 54th Streets

NEW YORK



The Genre Designs of an Old French Needlepoint *are reproduced in this Tapestry Covering*



Like its original, this tapestry, a reproduction of an antique French needlepoint, is filled with animated vignettes



INTERWOVEN with homely humor and acute observation, replete with popular anecdote from edge to edge, the genre tapestries of the 17th and 18th centuries have a variety of interest that makes them unique not only among tapestries but among all decorative textiles.

This fine modern tapestry recreates the same abundant and interesting forms which patterned a superb antique French museum piece. The original was done not on a tapestry loom, but in the still older fashion of needlepoint. The modern replica shows the tiny, charming figures of the original, mountebanks of old French countrysides with their dancing bear and fortune-telling bird. Flying insects, peacocks in pursuit, richly filling every space, are all framed and held into the composition by a winding ribbon suggestive of a Chinese cloud-band.

Like the original, it records in soft wools and reds and yellows of primitive freshness the rise of democratic taste. Far from mediaeval themes of chivalry, from the sumptuous classicism of the Renaissance, it faithfully follows the example of the peasant scenes later popularized by Teniers and Goya.

While this tapestry contains all the merits and charm of the original, modern developments in textile weaving have made it quite available for today's interiors. Other tapestries representing the genre traditions of France, of Flanders, and of Spain are in the Schumacher collection, while the whole range of tapestries, reproducing the best of the great periods, is unusually comprehensive.

Dealers and decorators will find in the Schumacher establishment a wide variety of fabrics suitable to all types of interiors.

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Design in Wall Paper

SAID "Arts and Decoration" recently:

"The reaction of architects and decorators—and consequently of the public as well—toward plaster finishes and plaster panel effects for walls was a reaction *not against wall paper but against bad design.*"

The italics are ours, because we want to emphasize again the point we have always stood for, namely: the most pleasing, colorful and harmonious way to cover walls is to use wall paper, provided it is artistically designed and faithfully executed.

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In a Spanish Castle in Cleveland Heights

The MURPHY IN-A-DOR BED

TWO hundred feet above Lake Erie, Cleveland has an apartment hotel of which she is justly proud. The Alcazar, a Spanish Castle in realization as well as in translation, has a total of 300 rooms [all outside] which form a nucleus of approximately one hundred suites.

225 Murphy In-A-Dor Beds give such flexibility to the entire floor scheme that it may be arranged to suit the guests in suites of a single room and bath up to those of five or six rooms.

Over 200 of the Murphy Beds in the Alcazar are of the twin type. By day they are out of sight and out of the way in their bed closets. At night they swing easily in position, turning the living room into a sleeping chamber. Murphy Beds are the only standard, full size beds that are effectively concealed by a standard 3-ft. door.

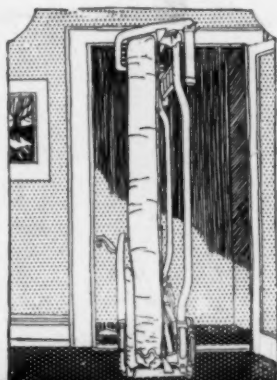
Looking into the patio through an archway of the loggia which surrounds it on three sides.



Geo. W. Hale, Owner
H. T. Jeffery, Architect
H. D. Hughes, Consulting Architect

The Alcazar from the inner court.

The very fact that such hotels as the Alcazar are planned and built to include the Murphy Bed testifies to its reputation as a bed that brings comfort to the guest who sleeps upon it, years of sturdy service to the owner who installs it and the gratitude of both to the architect who, by recommending it, made it possible for them to enjoy the convenience of an extra bedroom without extra building cost or extra household care.



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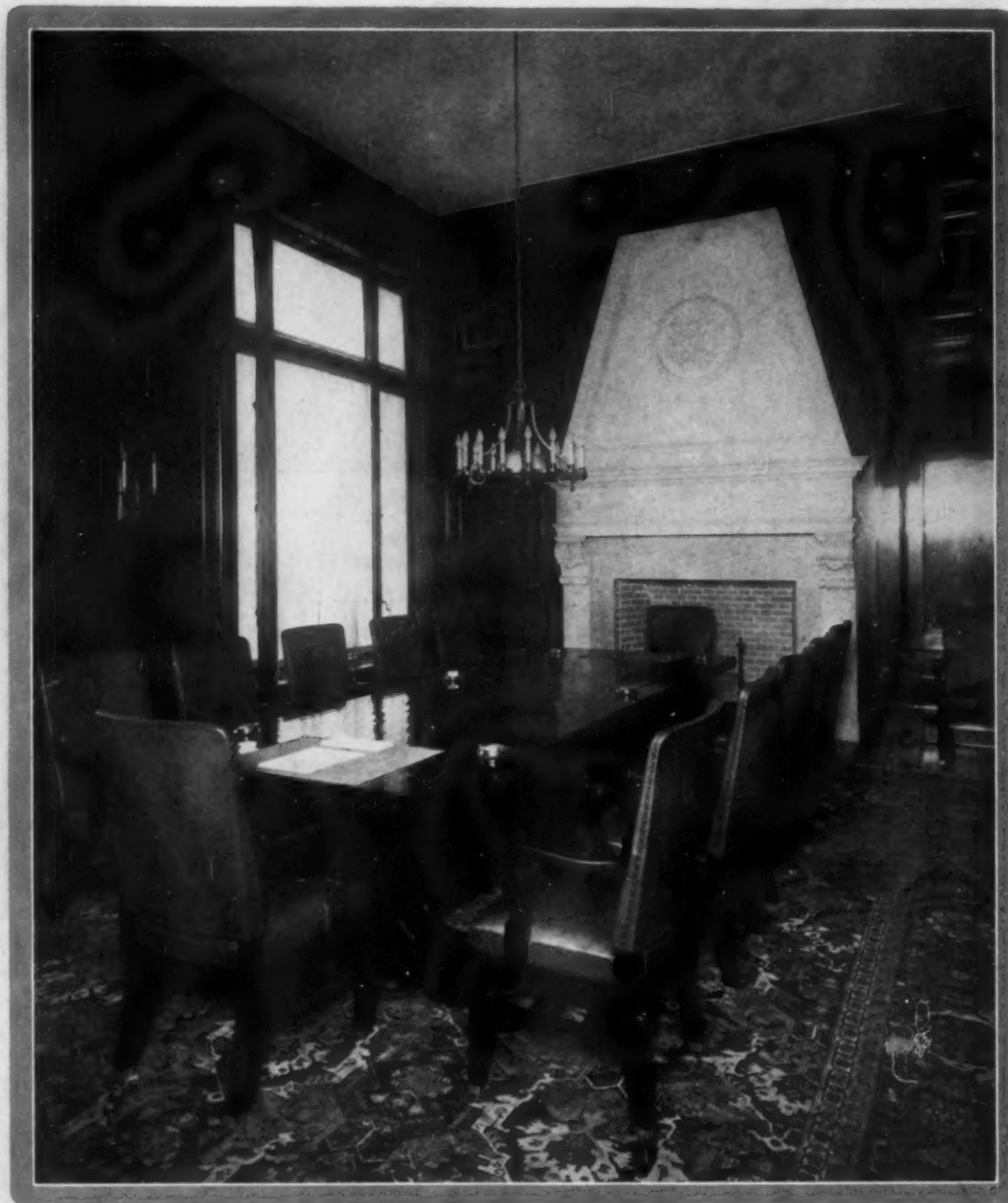
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Detail of the loggia where it leads from the patio into the hexagon-shaped lobby.



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View of Morrowfield Apartment Hotel, Pittsburgh, Pa., and twelve of the thirty-two Brunswick Alleys that comprise its bowling facilities.



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billiards
*a gentleman's
game*



The wallpaper design reproduced in this panel is one-tenth actual size.



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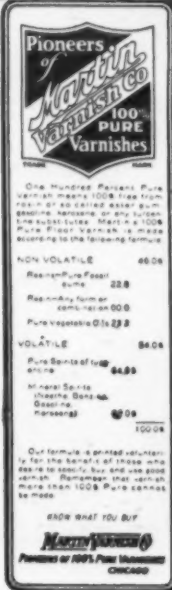
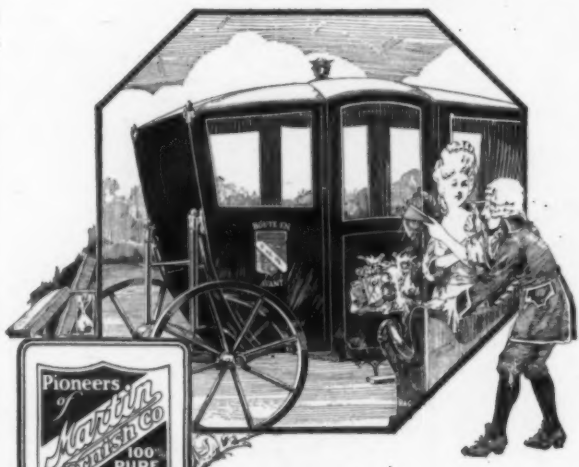
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"The carriage cost fifty-six thousand francs."

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"Of what are you sure? Let us hear."

"That he will be charmed with it."

Extract from "MONSIEUR DE CHAUVELIN'S WILL" by Alexander Dumas, (Handy Library Edition), Copyright 1897.

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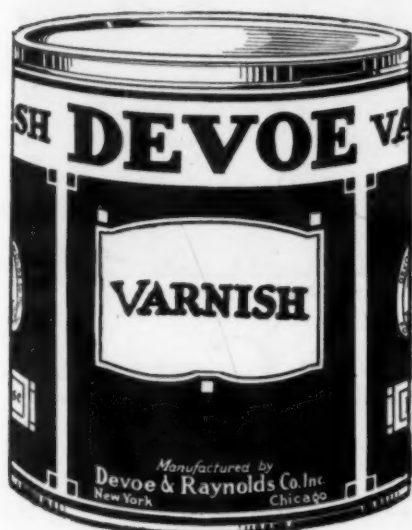
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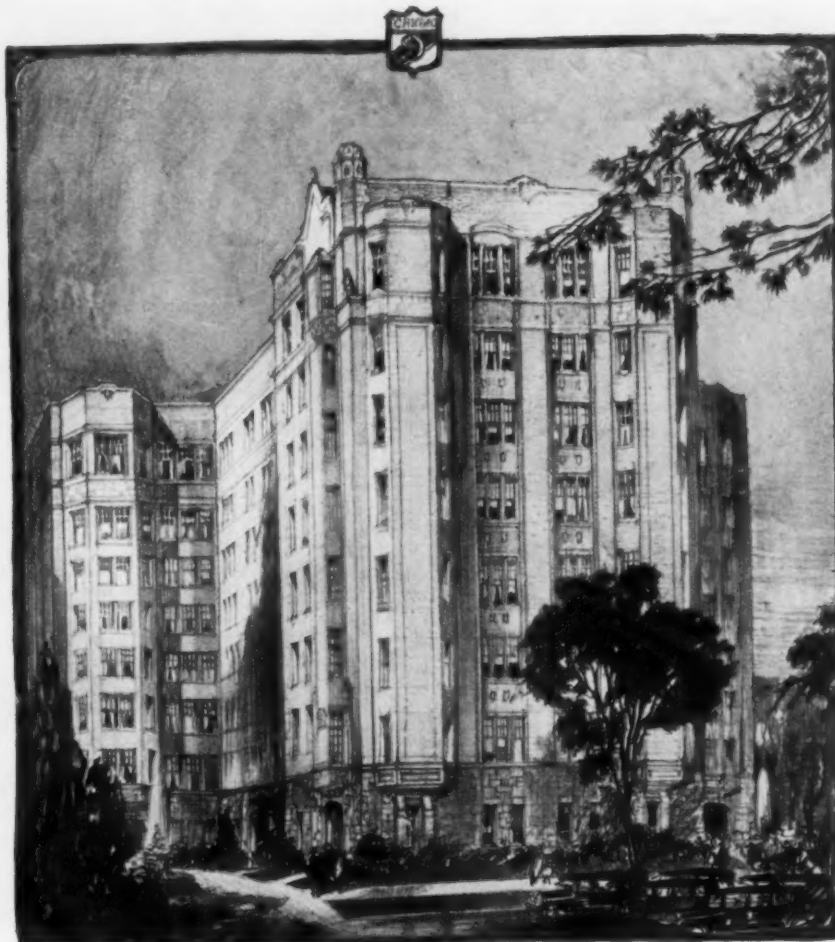
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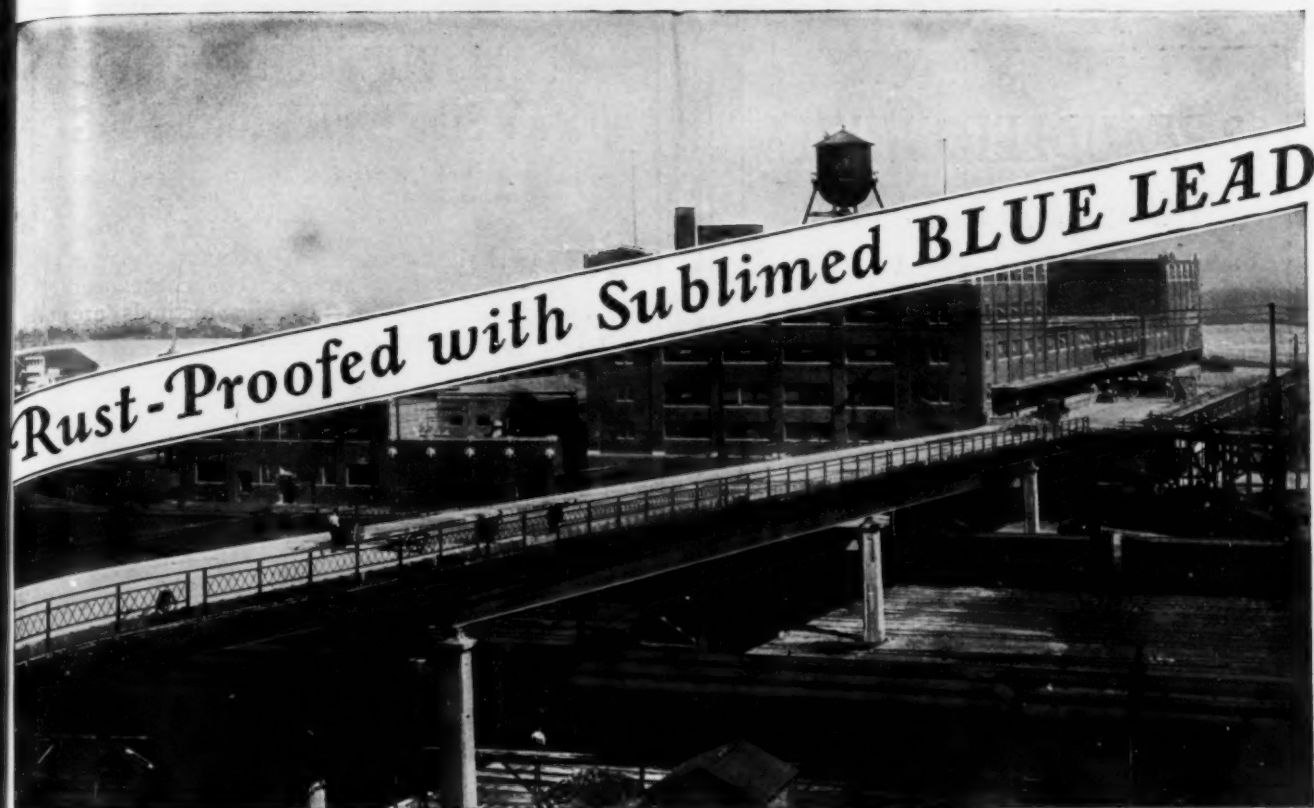


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from an original sketch by O. R. Eggers appearing
in "Sketches of Early American Architecture"

New York City Hall

*restored from
time-faded drawings*

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The restoration and decoration of the Governor's suite, as well as the other interiors of New York's City Hall were executed by Grosvenor



Atterbury, Architect, F. A. I. A., with the collaboration of his associate, John Almy Tompkins.

Plates of John McComb's original drawings sent free

In all of this restoration work, McComb's original drawings, wherever they existed, were painstakingly followed. We have been permitted to reproduce a few of these drawings in a Portfolio of Early American Architecture, which also contains accurate measured drawings of other noteworthy Colonial buildings. It will be sent free to any architect who writes for Portfolio No. 22.

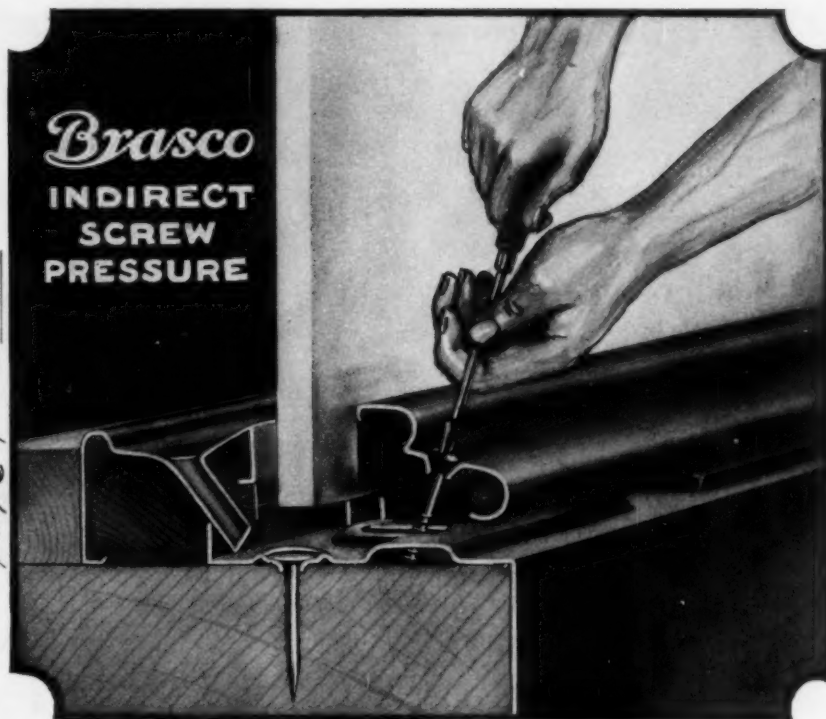
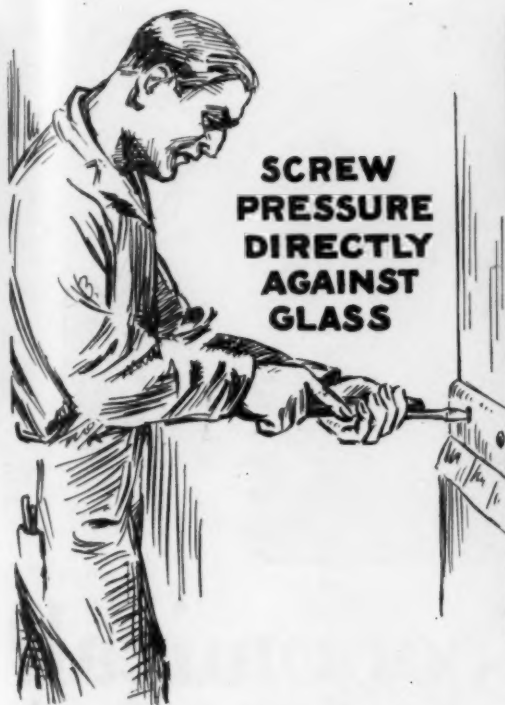
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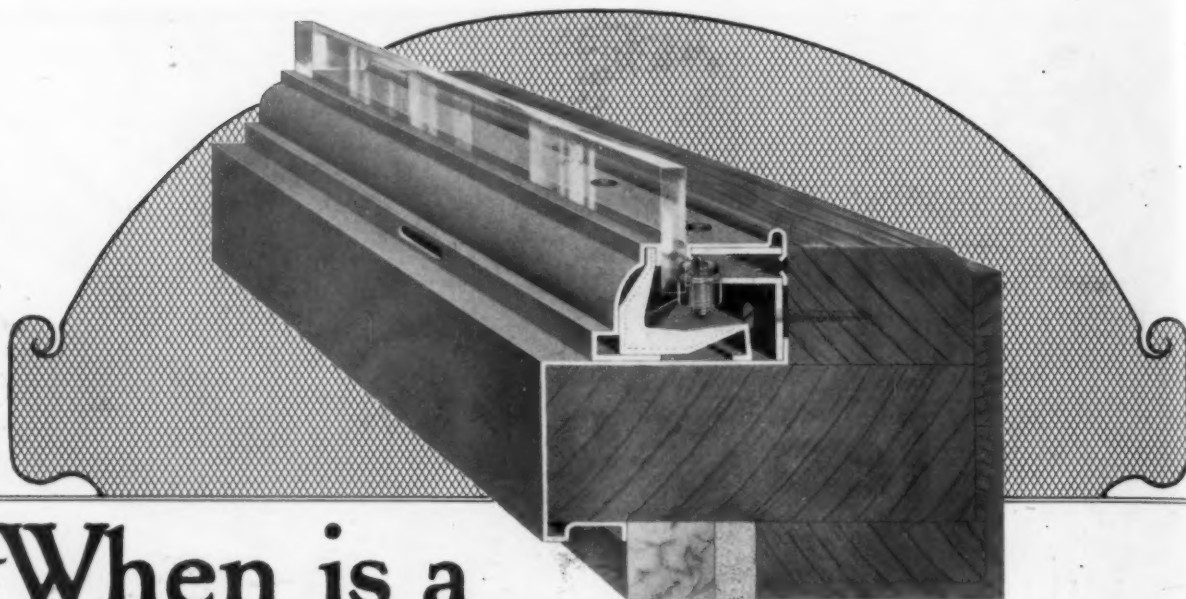
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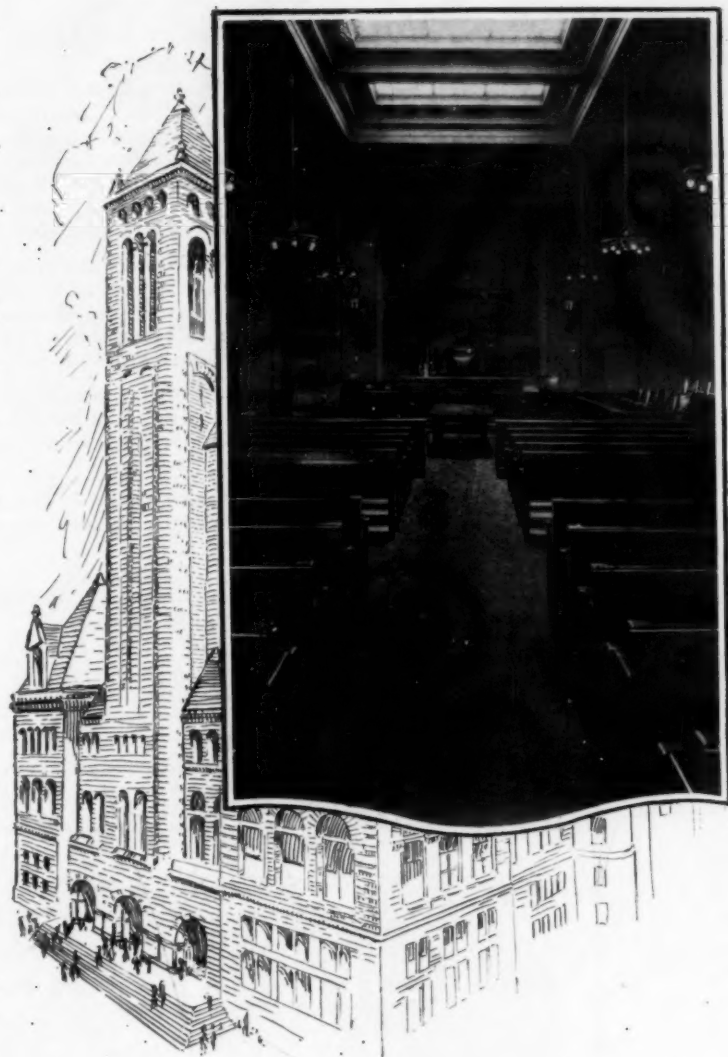
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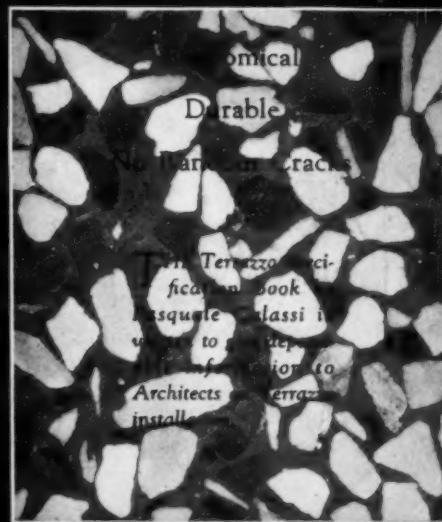
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Curtis Woodwork is sold by retail lumbermen east of the Rockies. Make sure the woodwork you buy bears this trade-mark.

**1866
CURTIS**

The makers of Curtis Woodwork are proud to identify their products by this mark.

TERRAZZO — by GALASSI —



The Galassi Company
153 East 38th St. NEW YORK
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FLOORING

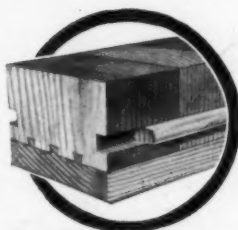
BLOXONEND

The Block Flooring that Stays Smooth



How long will it stay smooth? That's the important thing to consider when selecting a factory flooring. A floor, no matter how durable, that isn't smooth after a few years' service does not justify its original cost—its long life is valueless.

Smooth floors increase efficiency in trucking whether with men or with tractors by permitting the moving of heavier loads in less time; with less energy and without damage to trucking equipment or cargoes.



Bloxonend comes to the job in 8-ft. lengths with the small, tough blocks dovetailed endwise onto baseboards.

Bloxonend is made of Southern Pine with the tough end grain up. That means *durability*. And along with durability, Bloxonend combines the smoothness of dressed and matched flooring. It is the only end grain flooring so designed that it *must stay smooth*.

Note that Bloxonend lays directly over concrete, new or old. The "built-up" 8-foot lengths are splined and nailed together—the nails being furnished positioned in countersunk bores ready for driving.

There is an installation of Bloxonend Flooring—in industrial plant, bakery, publishing plant, school, etc.—in practically every city of any size in the United States. If you are designing a building that will require durable floors of lasting smoothness, you should investigate Bloxonend. Write nearest office today for architectural specifications.

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501 Fifth Avenue

CHICAGO
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BOSTON
910 Broad Exchange Bldg.

BLOXONEND
Lays Smooth **FLOORING** *Stays Smooth*

CLEVELAND
1900 Euclid Avenue

SAN FRANCISCO
907 Hobart Bldg.

DETROIT, MICH.
2328 1st Nat'l Bank Bldg.

Master Mix

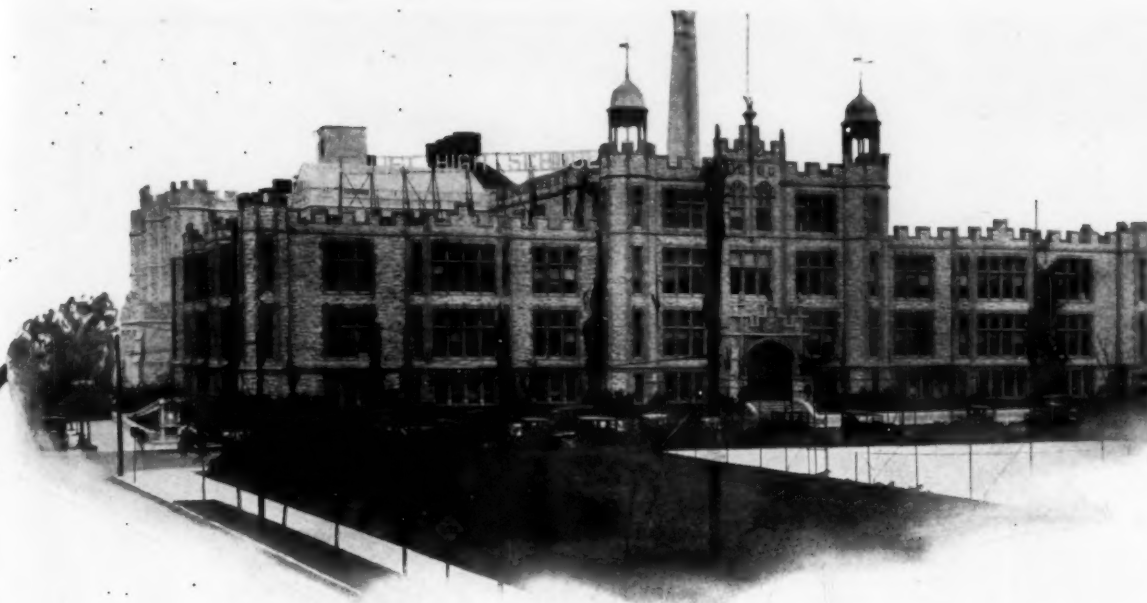
SAFEGUARDS WINTER BRICKWORK



The Pershing Square Bldg., New York. Yorke & Sawyer, Architects — C. T. Wills, Contractor. This is but one of many winter-built buildings of the first magnitude whose brickwork has been safeguarded and mortar joints waterproofed by the use of Master Mix.

Architects recognize the necessity of a waterproof brick mortar joint and the difficulty of securing it in freezing weather. Master Mix produces waterproof joints at freezing temperatures, and saves its cost by maintaining warm weather workability, eliminating a principle cause of delay in winter construction.

THE MASTER BUILDERS COMPANY
Cleveland, Ohio Irvington, N. J.



One of Ninety-one

AMONG the many fine buildings in the Middle West covered with Ruberoid Built-up Roofs is the Joliet High School; F. F. Allen and D. H. Burnham & Co., architects.

The Joliet High School is one of ninety-one contracts, involving over 350,000 square feet of roof surface, carried out by the Olsson Roofing Co. of Aurora, Ill., during the past fifteen months—each being a Ruberoid Built-up job.

It is particularly significant that Ruberoid Built-ups have attained such success in the Middle West where severe winters often follow intensely hot summers. Ruberoid roofs do not crack or soften. Their ingredients—Ruberoid Cap-sheet, Ruberoid Solid-cement and Ruberoid Asphalt Felt—retain their weather proofing qualities for many years, in spite of climatic conditions.

Architects, builders and construction engineers throughout the world have found in Ruberoid Built-up Roofs the very qualities they most desire—unsurpassed ability to resist weather and wear combined with light weight and economy of construction.

Samples and specifications for various types of Ruberoid Built-up Roofs will be sent you on request.



*There is but one Ruberoid—
Look for the Man on the Label.*

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95 Madison Avenue, New York

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RU-BER-OID

Built-up Roofs



Every morning the Sun comes up on
10 thousand "Cementile" Roofs. How
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Made from Keystone Copper Steel; highest quality roofing terne plates produced in this country—grades up to 40 pounds coating. These Plates assure better roofs, and the utmost of lasting and satisfactory protection—fireproof, durable, and economical.

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Residence of Harry C. Stutz, Indianapolis, Indiana. C. A. Gardner, Architect.

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A MAN who achieves a reputation for making a quality product is likely to be a user of quality products himself. Hence it's not surprising that Harry C. Stutz, the well-known builder of high-grade motor cars, selected IMPERIAL Roofing Tiles for his attractive new residence at Indianapolis, Indiana.

For generations to come, this roof will stand as a tribute to the good judgment of the builder. Neither sun nor wind nor rain nor snow will affect its permanency or coloring. Like all quality products, IMPERIAL Roofing Tiles cost a trifle more at first. But in the end they pay for themselves many times over.

IMPERIAL Roofing Tiles



LUDOWICI-CELADON COMPANY

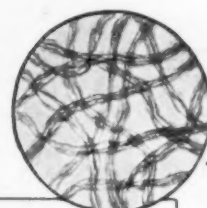
104 South Michigan Avenue • Chicago

565 Fifth Avenue • New York



The home of Mr. and Mrs. Clarence Bahlman, 3429 Herschel Avenue, Cincinnati, Ohio. It has a Richardson Multicrome Roof in opal

Note under the microscope how the long fibres of Richardson felt interlock to bind the Viskalt into an enduring weather-proof armor



A roof of rare new color—*opal* beautifies this Cincinnati home

To Mr. and Mrs. Clarence Bahlman, 3429 Herschel Avenue, Cincinnati, Ohio, belongs the distinction of being the first to have on their home the new Richardson *opal* roof. A wholly new color, it attracted much attention even while it was being laid. Completed, it more than fulfilled their expectations of unusual beauty.

This roof is built from the new Richardson opal shingles, no two of which are alike. On each are blended the two most beautiful Richardson colors in slate—weathered brown and jade green.

When these shingles are applied to the roof just as they come from the bundle, the result is a delicately mottled coloring like the play of light on a rippled mountain lake.

The Richardson Multicrome Roof

This, however, is but one example of the beauty secured in the Richardson Multicrome Roof. Equally attractive is the bronze mosaic coloring made by combining weathered brown and tile red slate flakes in the same manner. Many other color effects are possible—one to please every taste.

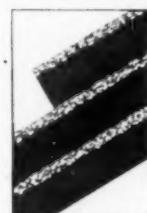
The Multicrome Roof is built of Richardson Super-Giant Shingles, extra large, extra heavy—to give greater beauty, longer endurance. The high quality of its inner materials, too, assures lasting beauty for this roof. Its base is sturdy Richardson felt, for fifty years recognized as the best. And the waterproofing is Viskalt—unusually durable because 99.8% pure bitumen, especially vacuum-processed.

50% thicker, it casts a deeper shadow line on the roof. Thus it is suitable for the more expensive homes as well as those of moderate cost.

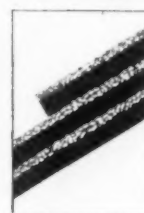
Write for our new booklet

If you have not already discovered the beautiful effects made possible by these new colors write us. We will send you our new booklet, *Roofs of Distinction*, together with samples of Richardson Super-Giant Shingles in opal, weathered brown and other colors. Just use the coupon below.

The RICHARDSON COMPANY
Lockland (Cincinnati) Ohio
Chicago New York City (1008 Fisk Bldg.)
New Orleans Atlanta Dallas



**Richardson
Multicrome
Roof**



**Ordinary
Roof**

*[cross sections
equally enlarged]*

The 50% greater thickness of this roof adds beauty of texture and years of endurance. Closely over-lapping slate flakes further protect the sturdy Viskalt-saturated base against weather and fire hazards

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Address

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RICHARDSON ROOFING



The service that made friends and the quality that keeps them

THE building that is going to house the library, the theatre or public business and pay full returns in freedom from the cost of repairs deserves more than an "ordinary" roof. It should be "roofed for permanence" with a roof tailored to fit.

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Federal Cement Tile Company
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"The Roof for Permanence"

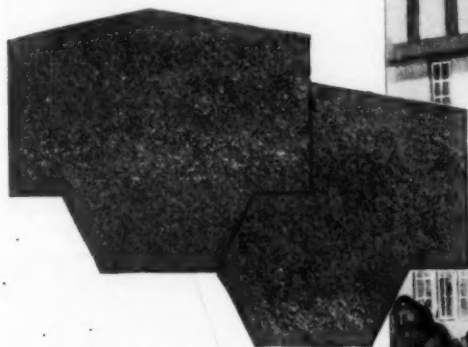
AF12-S-RTG

Preston

ROOFING



THIS distinctive design exposes two thicknesses at the butts, thereby creating the definite shadow-line demanded by architects.



THE design of the patented Hexo-Diamond Shingle produces at least two layers over the entire roof.

The unusual thickness of Preston Shingles makes a durable roof.



Shingles that make your home distinctive

THE colors of Preston Shingles are produced by the natural tints of the slate and stone particles with which they are surfaced. These shingles add the final touch of charm to any home whether mansion or cottage.

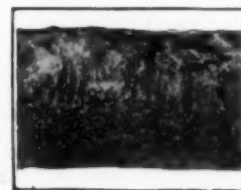
The design of the patented Hexo-Diamond Shingle makes a pattern which is a series of uniform hexagons.

Preston Hexo-Diamond Shingles are made in three

weights: Standard, Extra Heavy and Massive, and beside the Sunset shade in three colors: Green, Blue-Black and Red.

The "massive" weight is much thicker than any other slate-surfaced asphalt shingle on the market and approximately one-third thicker than a Standard No. 1 slate shingle.

We shall be glad to send you name of Regional Distributor on request.



MICROSCOPIC ENLARGEMENT

THE wearing qualities of Preston shingles depend not only on the quality, but on the quantity of asphalt which each shingle contains. If you examine the edge of a Preston Shingle you will notice that it is practically a solid body of asphalt. This feature of Preston Shingles accounts for their remarkable wearing quality.

KEYSTONE ROOFING MANUFACTURING COMPANY, YORK, PENN.



REDWOOD tree trunk, sound and free from decay after burial in moist ground under a tree whose annular rings indicated an age of 600 years. Sent to the mill, this centuries-buried Redwood was sawn into good lumber.

Why Redwood houses last for generations

THE notion that frame houses are but temporary structures seems ill-founded when one sees the old New England houses—some of them well over 200 years old and built entirely of wood. The discovery of this Redwood tree, still sound, although buried since before Columbus sailed, suggests the durability and permanence of Redwood as a building material. This centuries-buried Redwood was sent to the mill and sawn into good lumber.

The permanence of a frame house depends on the kind of wood that goes into its construction. Some woods are comparatively short-lived and subject to decay. The U. S. Forest Products Laboratory has studied and tested all commercial woods. In "Technical Note No. 173," recently issued, it gives Redwood the highest total rating for durability, lack of shrinkage, strength as a beam or post, ease of glueing, workability and ability to "stay put."

A digest of this government publication entitled "Physical and Mechanical Properties of Redwood in Comparison with Other Woods" has been compiled and will be gladly sent to you on request. It gives an authoritative answer to the questions of what woods to use and what can be reasonably expected from each kind.

In brief, these are some important advantages of Redwood: permeated during growth with a natural preservative, it is not subject to fungus decay and it is unattractive to boring worms and insects; properly seasoned, it does not warp, swell, twist or shrink; it takes and holds paint exceptionally well; it contains no pitch or highly inflammable substances, and therefore reduces the fire hazard wherever used.

SPECIFY Redwood for Siding, Exterior finish, Window, door and cellar frames, Shingles, Foundation timbers and mudsills, Interior trim, Mouldings, Lattice, Lath and plaster grounds, Pergolas, Greenhouses, Garden furniture.

Write for "Physical and Mechanical Properties of Redwood in Comparison with Other Woods."

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Redwood

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Central Building
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The Largest Manufacturers and Distributors of California Redwood



Common brick walls finished with Cabot's Old Virginia White; roof stained with Cabot's Creosote Shingle Stain, Lichen Green. F. A. Cooper, Architect, Chicago

Artistic Treatment of Common Brick

The effect of the brilliant white tone and the flat, velvety texture of

Cabot's Old Virginia White

is so pleasing that it transforms the cheapest and dullest brick into an artistic building material. Old Virginia White has a real "white stain" quality, and with the Lichen Green roof this house is a striking and harmonious picture.

Samples and full information on request

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Cabot's Creosote Stains, Insulating and Deadening Quilt, Brick and Stucco Stains, Concrete Wood Preservative, etc.

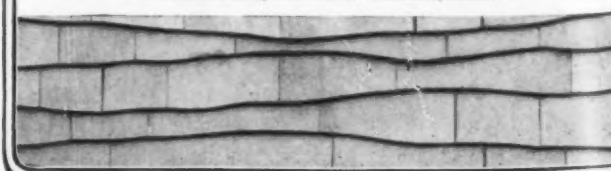


Artistic irregularity in thatch effects

THE uneven butts of WEATHERBEST Thatch Red Cedar Stained Shingles afford a welcome relief from the monotony of straight lines formerly considered unavoidable in roof design. In a similar manner WEATHERBEST Angle Butt Red Cedar Stained Shingles lend a pleasing touch of softness to sidewalls. And in all cases WEATHERBEST uniform edge-grain means prolonged attractiveness through color preservation and freedom from warping or curling.

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for zinc products*

"Neither snow nor rain nor heat—"

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Books on Various Technical Subjects

A list of recommended works on topics of importance to architects and engineers

VENTILATION

An exhaustive work on the subject, being the report of the New York State Commission on Ventilation appointed by the Governor at the request of the New York Association for Improving the Condition of the Poor and supported by the Milbank Fund. The work discusses ventilation in buildings of many kinds, but chiefly in schools and other public or semi-public buildings.

620 pp., 7 x 10 inches.

Price, \$15

COLLECTED PAPERS ON ACOUSTICS

By Wallace Clement Sabine

The work which is generally regarded as laying the foundation of the study of acoustics and the other branches of effort which grow out of it. It is the result of exhaustive research and much experiment with different materials and methods of building.

278 pp., 7½ x 10½ inches.

Price, \$4

TOWN PLANNING AND TOWN DEVELOPMENT

By S. D. Adshead

This practical work takes up the question of town planning in a very broad way, beginning with its sociological aspect and the relation of large productive centers to their recreative and residential areas. Zoning, zoning laws and principles receive due attention, as does also the matter of town planning by private initiative, of which several peculiarly interesting examples are given, with plans and illustrations.

204 pp., 5½ x 8½ inches.

16 plates and 18 diagrams in the text.

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THE PLANNING OF APARTMENT HOUSES, TENEMENTS AND COUNTRY HOMES

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A complete treatise on the planning of these structures, with particular attention given to the methods of utilizing plot areas to the greatest advantage.

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A standard work on the use of ornament in architecture and decoration. Illustrated with 300 full-page plates of the ornament of all the historic periods of architecture. More than 3,000 illustrations.

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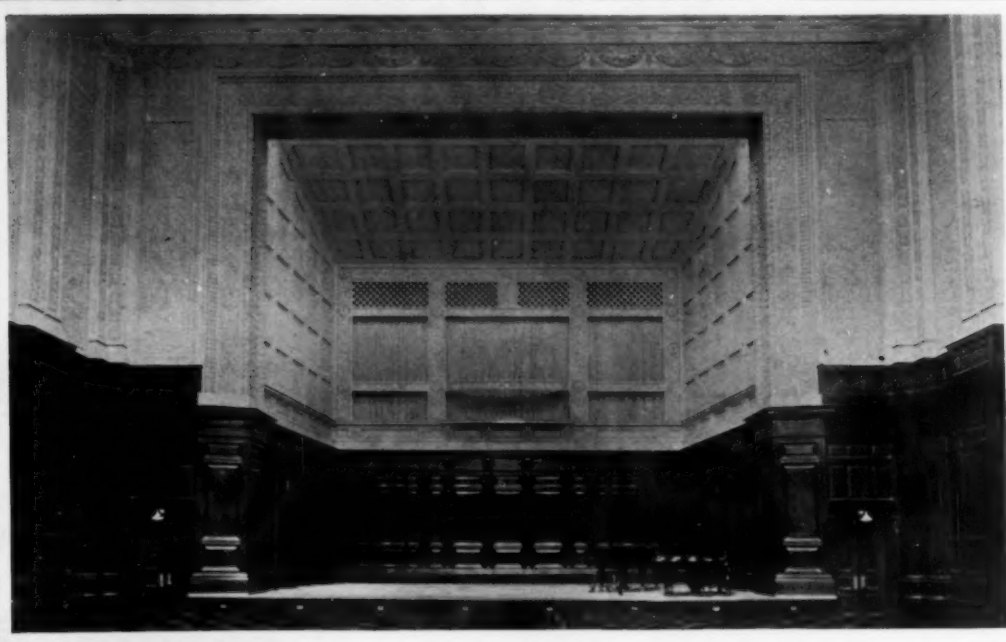
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New York



*Recital Hall in Smith Memorial Building, University of Illinois
James M. White, Supervising Architect*

American Walnut

improves acoustics and adds beauty
to this classical recital hall

THIS classically beautiful recital hall in the Smith Memorial Building at the University of Illinois is a fine example of modern adaptation of the graceful Italian Renaissance style.

"In studying this room for its acoustic properties," writes Architect James M. White, "it was felt that considerable wood paneling would be required to increase the resonance. American Walnut was selected as the wood most in keeping with the classical style of architecture adopted."

Here is another quality of American Walnut revealed in this gracious music chamber. Resonance which adds beauty of tone, volume of sound and trueness to pitch to fine music produced within its paneled walls.

Walnut has always been known for its loveliness and for the variety of its patterns and designs; its durability which has defied the ages. It is the wood supreme which combines all the attributes of other good cabinet woods. And it is a thoroughly practical wood for its color is natural, not due to surface staining, so it does not betray dents and scratches. And it is easily kept looking its best.

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"Ripple" Figured Walnut

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FILLING an entire city block, this modern metropolitan hotel offers its guests the ultimate in furnishings, service and accommodations. And, therefore, it has Roddis Flush Doors installed throughout. For no other door provides so great beauty of appearance and durability of service.

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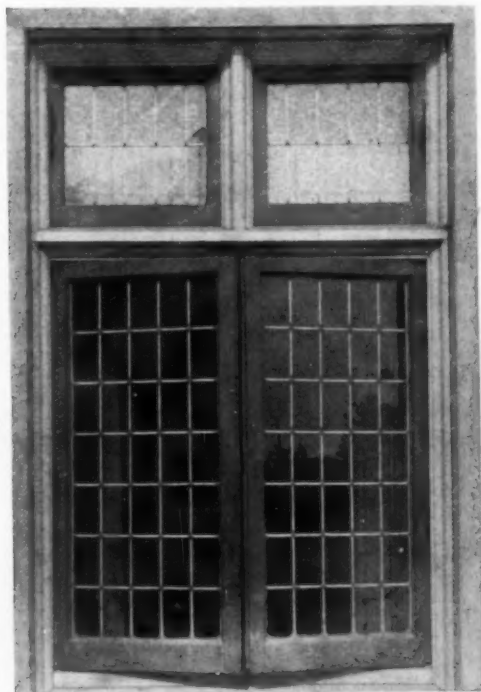
It's our first elevator door installation and has been in continuous operation since 1906. Many larger installations have followed it; methods of construction have been materially developed and improved; but through it all we can point with pride to the first fruits of our toil because it possessed that element of distinction which is only achieved through an earnest desire to produce the best in a given piece of work. That is still our motive force and Dahlstrom Elevator Inclosures today possess that same element of distinction as in days gone by.

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*Local Representatives in
Principal Cities*

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ELEVATOR INCLOSURES
IN THE
WELLS FARGO BLDG.,
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 Portfolio of Detailed Drawings
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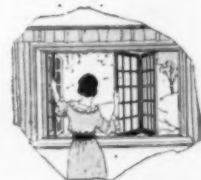
HOFFMAN CASEMENTS

Folding wood casement windows, hinged together in pairs, but not attached to either jamb; providing when set in the position shown, an abundance of fresh air without any direct draft.

Installed to open either in or out, weather tight both ways, clean from inside.

Hoffman Casements are efficient windows for all types of buildings.

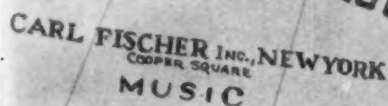
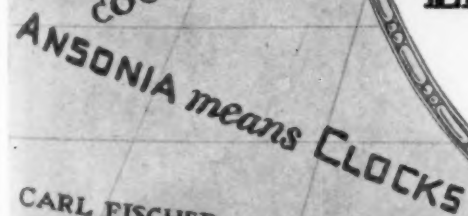
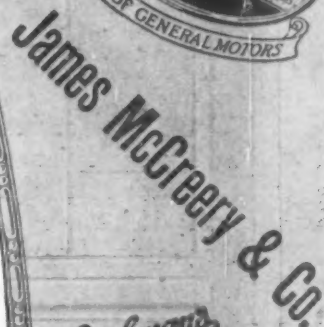
Andrew Hoffman Mfg. Co.
 Hoffman Casement Window
 900 Steger Building
 Chicago



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SEEKS
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Peelle Kalamein
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balanced Door

THE trade mark symbolizes achievement—it guarantees the quality of the product. Manufacturers, with whom quality is the first consideration, seek also for quality in products needed for their own requirements. It is quite natural that Peelle Doors should be installed in the buildings of the concerns represented by these trade marks.

Peelle Freight Elevator Doors are counterbalanced and vertical in operation. Exactness in design eliminates friction, allows smooth and easy operation. Many other features are described in the new Peelle catalog. It will be gladly sent upon request.

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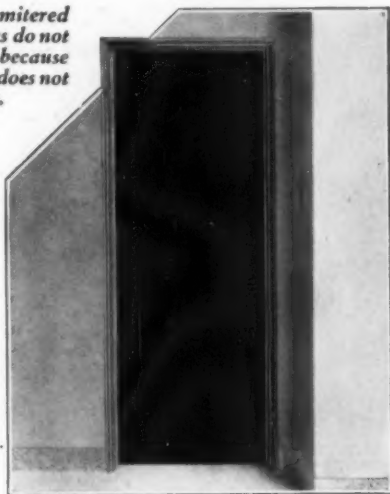
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COUNTERBALANCED - TRUCKABLE

**Freight
ELEVATOR DOORS**



These mitered corners do not open, because metal does not shrink.



Doorway trimmed with Knapp Flush Metal Casing

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THE ample and enduring precautions for sanitation which Knapp Sanitary Metal Trim provides, save many, many dollars—every day, every month, for years and years.

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And so cleanliness, good appearance and healthful surroundings are constantly maintained with great economy.

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ORIGINATORS OF SASH CHAINS

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30,000 feet of our
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used in this
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Our chains are in daily use in most of the prominent school houses, hospitals, hotels, libraries, post offices and office buildings of the United States.

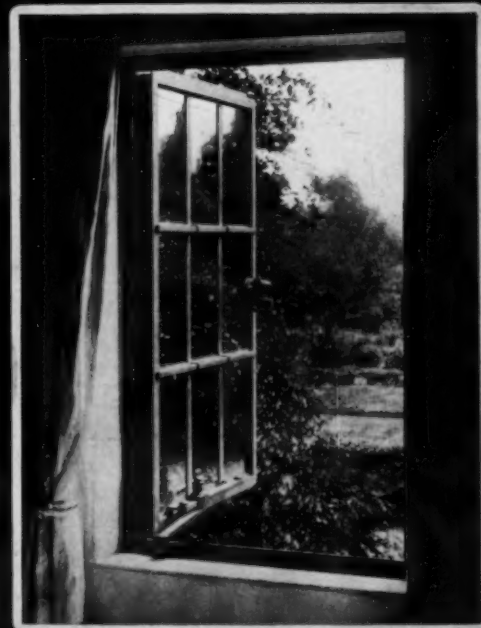
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Send for Our Sash Chain Catalog A-1

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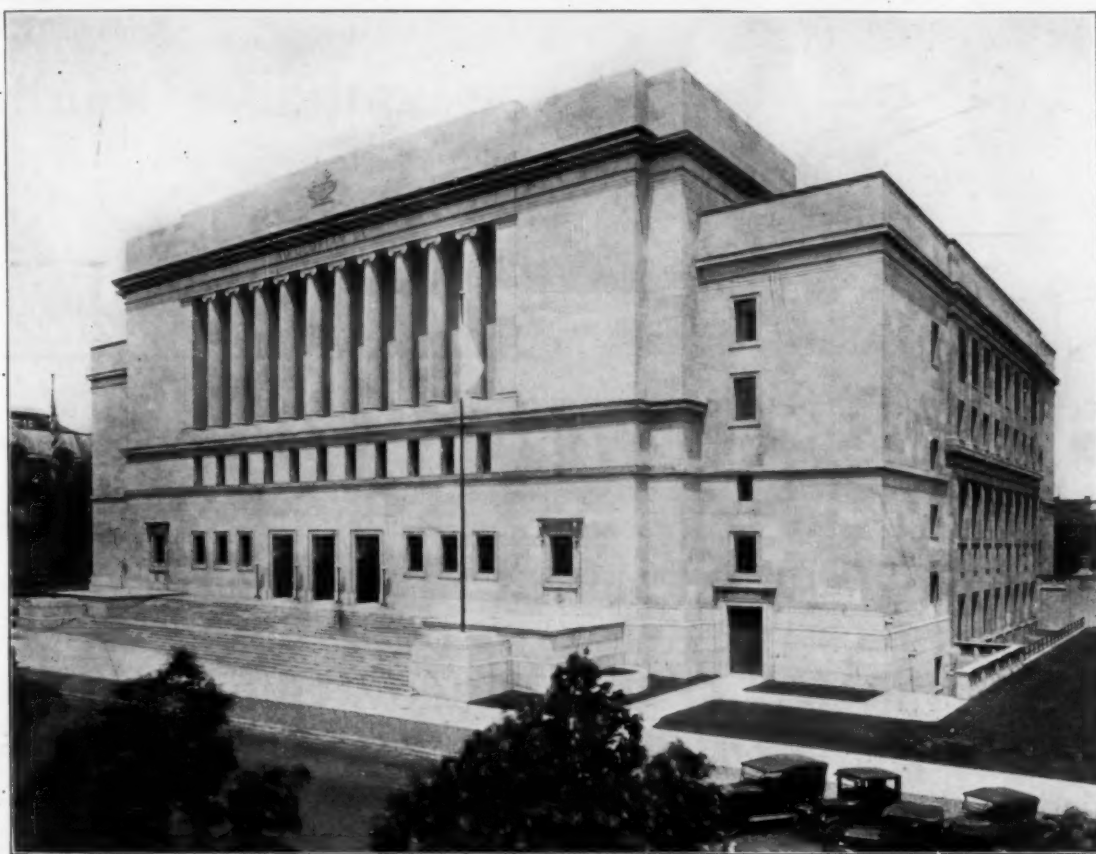
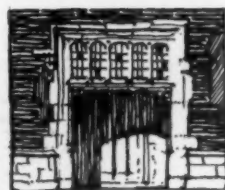
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HENRY HOPE & SONS
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Also manufacturers
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INTERNATIONAL Steel Case-
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zations. Harmonizing with the archi-
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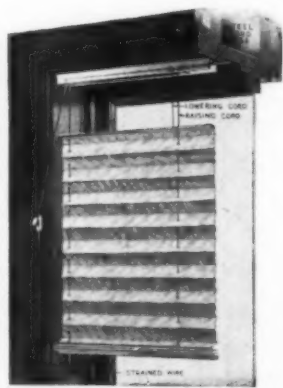


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cause they add a touch of beauty to a building—and because experience has shown that considering their long years of usefulness **they are the most economical shades obtainable**—they have become “standard equipment” in fine buildings of all types—offices, homes, apartments, schools, hotels, hospitals, etc.



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Cloth-Lined Metal Weatherstrips
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Athey Company

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Its many fine features of serviceability make the Crittall Reversible window, ideal as an office installation.

Crittall Reversible Windows are used in the Jefferson Standard Building, Greensboro, N. C., illustrated at right. Chas. C. Hartmann, Architect



CRITTALL

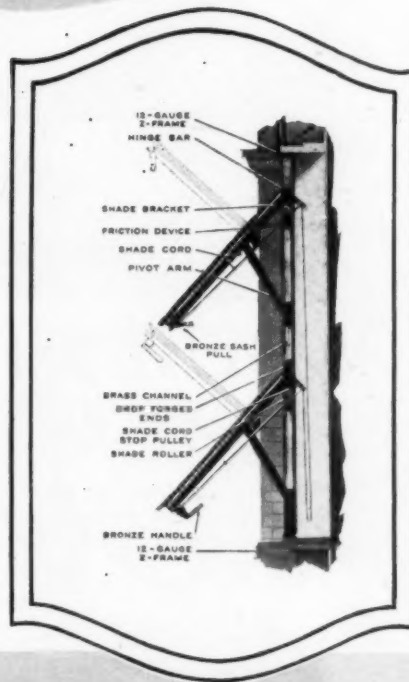
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With highest utility, fine appearance and superior quality, the Crittall Reversible window also offers a price advantage that cannot fail to impress architects and builders.

It combines maximum light with a wide, easily adjusted ventilating range. It is ideal for schools, hospitals, office buildings, and factory offices. Never out of order. Silent and smooth in operation. Complete reversibility permits windows to be washed from inside. Construction is simple and strong and materials of highest selected quality. This window will last the life of the building without repair or mechanical attention.

The services of our engineers are gladly placed at the disposal of architects for assistance in the solution of unusual window problems.

All Crittall Casements and Windows are Made of Crittalloys—the Copper Bearing Steel

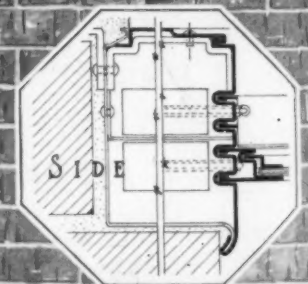
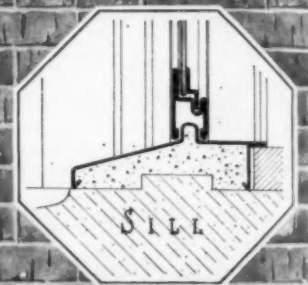
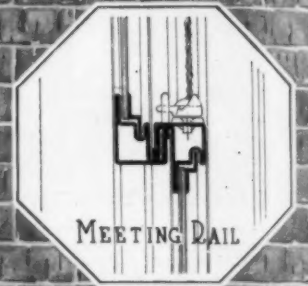
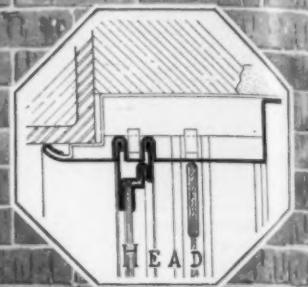


CRITTALL CASEMENT WINDOW CO. • • Manufacturers • • DETROIT

Kawneer WINDOWS

IN SOLID NICKEL-SILVER OR COPPER

MADE FROM HEAVY DRAWN METAL MOULDINGS
ALL JOINTS THOROUGHLY WELDED



BUILT for PERMANENCY

Kawneer Windows are made of metals that have stood the test of centuries against rust and deterioration.

Sturdy construction gives lasting service and permanent materials assure satisfactory operation with no up-keep cost.

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Adequate weathering provided by interlocking mouldings for all engaging parts.

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FULL SIZE DETAILS AND MODELS SHOWN UPON REQUEST

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NILES, MICHIGAN



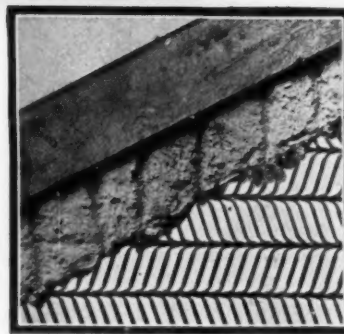
Furnished apartment, Wardman Park Hotel, Washington, D. C. This 1200 room hotel is Herringbone construction throughout.

Free Forever From Unsightly Cracks

INTERIOR walls constructed with GF Herringbone retain their good appearance. Cracks, sagging and spalling of plaster are eliminated. Original beauty becomes a permanent thing.

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You will find the "Herringbone Handbook" filled with usable information. We will gladly mail you a copy on request.



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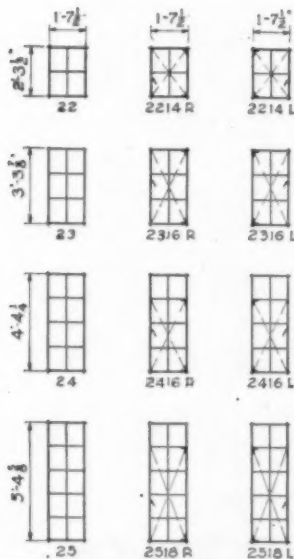
Herringbone Rigid Metal Lath

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REFINED



FENESTRA CASEMENTS



The stock sizes and types of Fenestra Casements shown above are ready for immediate delivery anywhere. They are supplied in both fixed and ventilated units hinged on both right and left side.

THE delicate lines and beautiful design of Fenestra Casement Windows add to the charm and interest of any home, large or small. The slender bars and small panes of these fine old English Windows become a part of the room decorations themselves, and contribute to the appearance of the home inside and out.

But Fenestra Casements are more than beautiful—they are entirely practical as well. They are made of solid steel and cannot warp or decay. They are weathered by two-point, flat contact all around. They can be washed from inside the building.

Fenestra Casements can be held open at any angle desired, while an attractive handle locks the swing leaves firmly and prevents rattle.

Fenestra Casements are made in a wide variety of styles and sizes all of which are described and illustrated in "Fenestra Casements"—a book prepared for architects. We will gladly send you a copy without any obligation on your part.

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Division of Architectural Construction

[BRILLIANT DIFFUSIVE BEAUTIFUL]



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TAPESTRY GLASS obscures vision, breaks up direct rays of light and diffuses them in a clear and brilliant flood. By a special exclusive process the surfaces are given a smoothly rounded texture, not unlike fine fabric. These surfaces collect and transmit the maximum of light through the body of Tapestry Glass, which has all the purity and clarity of the finest plate.

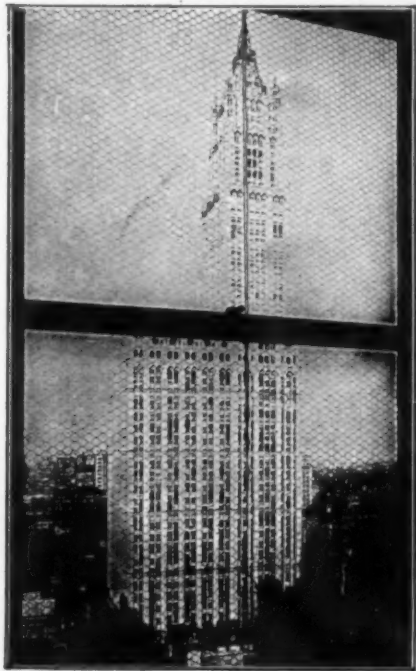
Tapestry Glass is now used for windows, partitions, doors and other openings in many of the newest and finest buildings in all parts of the country. For residences, banks, churches, schools, fraternal buildings—wherever the maximum of light is necessary and privacy is desirable Tapestry Glass is now

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Investigate the possibilities of Tapestry Glass through the nearest glass dealer or write for catalog and samples to the Pittsburgh Plate Glass Company.

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THE WOOLWORTH BUILDING
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A Wire Glass installation from the
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MISSISSIPPI WIRE GLASS CO.
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WILSON Rolling Front Wardrobes save space and construction cost, eliminating the need of cloakrooms. They provide ample room for pupils' clothing as well as being thoroughly ventilated. The fronts roll upward, out of sight and out of the way. Additional blackboard surface may be provided, if required.

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Selected List of Manufacturers' Publications

FOR THE SERVICE OF ARCHITECTS, ENGINEERS, DECORATORS, AND CONTRACTORS

The publications listed in these columns are the most important of those issued by leading manufacturers identified with the building industry. They may be had without charge, unless otherwise noted, by applying on your business stationery to *The Architectural Forum*, 383 Madison Ave., New York, or the manufacturer direct, in which case kindly mention this publication.

ACOUSTICS

- Johns-Manville, Inc.**, Madison Ave. & 41st St., New York, N. Y.
Architectural Acoustics. Booklet. 6 x 9 in. 24 pp. Illustrated. Treatise on the correction of architectural acoustics in churches, schools, hospitals, office buildings and other places.
- Macoustic Engineering Company, Inc.**, 323 Bulkley Building, Cleveland, Ohio.
Acoustics. Folder. 3/4 x 6 1/4 in. 2 pp. Not illustrated. Contains brief account of the care in the selection of the architect for the Cleveland Public Hall; the reasons for selecting him; and brief reference to "Sound Direction and Control" principles.
- Offering to Architects. Folder. 8 1/2 x 11 in. 2 pp. Illustrated. Contains comments on acoustics of the Cleveland Auditorium by leading artists; list of buildings treated by Macoustic "Sound Direction and Control" principles; many features as to application, appearance, color treatment, financial saving, and complete explanation of engineering service.
- Expanding Macoustic. Folder. 7 1/4 x 10 in. 1 Sheet. Illustrated. A sheet containing information as to how an architect can avail himself of the engineering service which we have to offer.

ASH HOISTS—ELECTRIC AND HAND POWER

- Gillis & Geoghegan**, 544 West Broadway, New York, N. Y.
General Catalog. 8 1/2 x 11 in. 20 pp. Fully illustrated. Contains specifications in two forms (with manufacturers' name and without). Detail 1/4 in. scale for each telescopic model and special material-handling section.
- The Man-Saving Load Lifter. 5 1/2 x 8 1/2 in. 8 pp. Illustrated. Describes G&G Telescopic and Non-Telescopic Hoists for handling material in factories.

BATHROOM ACCESSORIES

- The Fairfacts Company**, 234 West 14th St., New York, N. Y.
Catalog F. 4 x 9 in. 12 pp. Illustrated. Describes full line of china fittings for bathrooms.
- The Perfect Bathroom. Booklet. 3 x 9 in. 12 pp. Illustrated. Shows full line, Biltin and Projecting Types, installed. For architects and clients.

BOILERS—See Heating Equipment

BRICK

- Acme Brick Company**, Ft. Worth, Tex.
Series No. 1
Architectural designs rendered in Acme Brick. Booklet. 11 x 8 1/2 in. Illustrated. A series of 48 photogravures showing architectural designs rendered in Acme brick. Illustrations show the various types of buildings erected in the Southwest in recent years. Sent free to architects applying on their office stationery.
- American Face Brick Association**, 1751 Peoples Life Bldg., Chicago, Ill.
The Story of Brick. Third Edition. Booklet. 7 x 9 1/4 in. 55 pp. Illustrated. Presents the merits of face brick from structural and artistic standpoints. Tables of comparative costs.
- The Home of Beauty. Fourth Edition. Book. 8 x 10 in. 72 pp. Color plates. Presents fifty designs for small face brick houses submitted in national competition by architects. Text by Aymar Embury II, Architect. Price 50c.
- Bungalow and Small House Plans. Booklet. 8 1/2 x 11 in. 50 pp. Illustrated. Four booklets, showing a variety of designs for small face brick houses, covering 3, 4, 5, 6, 7 and 8 room houses. Price, 25c. each, \$1 for the set.
- A Manual of Face Brick Construction. Booklet. 8 1/2 x 11 in. Text-book on construction of the brick wall and various uses of face brick. 31 colored plates of brick houses with plans. Price, \$1.00.
- Architectural Details in Brickwork. Series 1, 2, 3. 8 1/2 x 11 in. Very useful to the architect or draftsman. Sent free to architects applying on their office stationery. To others \$1.50.

BUILDING FINANCE

- S. W. Straus & Co.**, 565 Fifth Ave., New York, N. Y.
Forty-two Years without Loss to Any Investor. Booklet. 8 x 5 in. 38 pp. Illustrated. A carefully prepared booklet for the thinking investor. Describes Straus bonds, the property upon which loans are made, and explains the Straus plan of safeguards which made possible the 42-year record.

BUILDING STONE—See Stone, Building

BUILDING, STANDARD STEEL

- Truscon Steel Company**, 250 W. Lafayette Blvd., Detroit, Mich.
Truscon Standard Building Catalog. 8 1/2 x 11 in. 48 pp. Contains data and illustrations.

BUILDING, STEEL PRODUCTS FOR

- Massillon Steel Joist Company, The**, Massillon, Ohio.
Massillon Bar Joists. Pamphlet. 8 1/2 x 11 in. 8 pp. Illustrated. Pamphlet containing general information descriptive of Massillon Bar Joist Fireproof Floor Construction, with cuts showing methods of construction and photographs of installations.
- Detailed Dimensions, Safe Loading Tables, Details of Construction. Catalog. 8 1/2 x 11 in. 32 pp. Illustrated.
- Catalog contains complete detailed information about each Massillon Bar Joist Structural Unit.
- Truscon Steel Company**, 250 W. Lafayette Blvd., Detroit, Mich.
Truscon Data Book. Catalog. 3 1/2 x 6 in. 128 pp. Illustrated. Contains complete information with illustrations on Truscon reinforcing steel, steel windows, metal lath, standard buildings, concrete inserts, steel joists, pressed steel stamping and chemical products.

CARPETS, IMPORTED

- Kent-Costikyan Trading Company, Inc.**, 484 Fifth Ave., New York, N. Y.
Rugs. Catalog. 9 1/4 x 6 1/4. 56 pp. Illustrated. Illustrates and describes an unusual collection of Oriental and Occidental rugs with stock list.

CEMENT

- Carney Company, The**, Mankato, Minn. Booklet. 8 x 10 in. 24 pp. Illustrated. Complete information on product, showing prominent buildings in which this cement has been used.
- Booklet. 8 1/2 x 11 in. 8 pp. Illustrated. Attractive circular describing late improvements in manufacturing Carney; cost comparisons, physical tests, specifications and testimonials. Contains four-page list of Carney-built buildings in all parts of the United States with architects' and contractors' names.
- Louisville Cement Co.**, 315 Guthrie St., Louisville, Ky.
Brixment. Booklet. 7 1/2 x 5 in. 16 pp. Illustrated. Brixment, what it is, what it does, how it does it and why.
- Sandusky Cement Co.**, Dept. F, Cleveland, Ohio.
Medusa Waterproof White Portland Cement. Booklet. 8 1/2 x 11 in. 32 pp. Illustrated.
- Medusa Integral Waterproofing Powder and Paste. Booklet. 8 1/2 x 11 in. 88 pp. and cover.

CONDUIT

- National Metal Molding Co.**, 1113 Fulton Building, Pittsburgh, Pa.
Bulletin of all National Metal Molding Products. In correspondence folder. 9 1/2 x 11 1/2 in.
- Sheraduct. Circular. 5 x 8 in. Illustrated.
- Flexsteel. Circular. 5 x 8 in. Illustrated.

CONSTRUCTION, FIREPROOF

- Massillon Steel Joist Co.**, Massillon, Ohio.
Massillon Bar Joists. Brochure. 8 1/2 x 11 in. Illustrated. Full data regarding the steel used for construction of floors in fireproof buildings of various kinds.
- National Fire Proofing Co.**, 250 Federal St., Pittsburgh, Pa.
Standard Fire Proofing Bulletin 171. 8 1/2 x 11 in. 32 pp. Illustrated. A treatise on fireproof floor construction.
- Northwestern Expanded Metal Co.**, 934 Old Colony Building, Chicago, Ill.
Fireproof Construction Catalog. 6 x 9 in. 72 pp. Illustrated. Handbook of practical suggestions for architects and contractors. Describing Nemco Expanded Metal Lath.

DAMP-PROOFING

- Philip Carey Co.**, Lockland, Cincinnati, Ohio.
Architects' Specifications for Carey Built-Up Roofing. Booklet. 8 x 10 1/4 in. 24 pp. Illustrated. Complete data to aid in specifying the different types of built-up roofing to suit the kind of roof construction to be covered.
- Carey Built-Up Roofing for Modern School Buildings. Booklet. 8 x 10 1/4 in. 32 pp. Illustrated. A study of school buildings of a number of different kinds and the roofing materials adapted for each.
- Sonneborn Sons, Inc., L.**, 116 Fifth Ave., New York.
Specification Sheet. 8 1/2 x 11 in. Descriptions and specifications of compounds for damp-proofing interior and exterior surfaces.

DOORS AND TRIM, METAL

- The American Brass Company**, Waterbury, Conn.
Illustrated pamphlet describing use and adaptability of Extruded Architectural Bronze Shapes for metal window frames, doors, grilles, counter screens, etc.
- The Compound & Pyrono Door Company**, St. Joseph, Mich.
Pyrono Handbook for Architects and Contractors. 8 1/2 x 11 in. 16 pp. Contains full information regarding Pyrono Fireproof Veneered Doors and Trim, with complete details and specifications.
- Pyrono details in sheet form for tracing.
- Dahlstrom Metallic Door Company**, 425 Buffalo St., Jamestown, N. Y.
Architectural Catalog. 10 x 14 in. 46 pp. 11 sections. Illustrated. Catalog showing the regular styles and types of hollow metal doors and interior trim. Various types of frames and other architectural shapes also illustrated.
- Buildings as They Should Be. Booklet 7 1/2 x 10 1/2 in. A lavishly illustrated publication giving data and views of buildings of different kinds equipped with Dahlstrom doors and trim.
- Richards-Wilcox Mfg. Co.**, Aurora, Ill.
Fire Doors and Hardware. Booklet. 8 1/2 x 11 in. 64 pp. Illustrated. Describes entire line of tin-clad and corrugated fire doors, complete with automatic closers, track hangers and all the latest equipment—all approved and labeled by Underwriters' Laboratories.

DOORS—SERVICE

- Servidor Company, The**, 101 Park Ave., New York, N. Y.
The Steel Servidor. Specifications, Data, Details and Description. Size 8 1/2 x 11 in. 8 pp.
- Advantages of Servidor Service. Summarizes Servidor Service, outlines its merits and advantages and new revenue-producing power. Size 8 1/2 x 11 in. 8 pp.
- Bulletin A-3—The Eternal Tip. Size 6 1/2 x 9 in. 8 pp.
- Bulletin A-8—Servidores as an Investment. Size 6 1/2 x 9 in. 8 pp.

DRAFTING MATERIALS

- American Lead Pencil Company**, 220 Fifth Ave., New York, N. Y.
VENUS Pencil in Mechanical Drafting. Booklet C20. 6 x 9 in. 16 pp. Illustrated. Describes the many possibilities of the VENUS for technical drawing.
- Catalog. 3 1/4 x 8 1/4 in. 25 pp. Illustrated. Describes pencils, holders, erasers, etc.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 101

DUMBWAITERS

- Kaestner & Hecht Co.**, Chicago, Ill.
Bulletin 520. Describes K. & H. Co. electric dumbwaiters. 8 pp.
- Sedgwick Machine Works**, 151 West 15th St., New York.
Catalog and Service Sheets. Standard specifications, plans and prices for various types, etc. $4\frac{1}{2} \times 8\frac{1}{2}$ in. 60 pp. Illustrated.

ELECTRICAL EQUIPMENT

- Frank Adam Electric Company**, St. Louis, Missouri.
Catalog No. 32—1924 Panelboards—Steel Cabinets. 48 pp. $7\frac{3}{4} \times 10\frac{1}{2}$ in. Illustrates and describes Safety Type Sectionally Constructed Panelboards, together with complete catalog listings.
- Frank, Inc.**, I. P., 24th St. and 10th Ave., New York, N. Y.
Catalog 415. $8\frac{1}{2} \times 11$ in. 46 pp. Photographs and scaled cross-sections. Specialized bank lighting, screen and partition reflectors, double and single desk reflectors and Polaralite Signs.
- The Edwin F. Guth Co.**, 2615 Washington Ave., St. Louis, Mo.
Brascolite Catalog No. 10. $10\frac{1}{2} \times 8$ in. 28 pp. Illustrated. Catalog listing Brascolite fixtures in wide variety of plain and decorative types. Contains information of value in planning a lighting installation.
- Bank and Office Building Catalog**. $10\frac{1}{2} \times 8$ in. 16 pp. Illustrated. Catalog listing a selected line of fixture equipment for application to all outlets in bank or office buildings or similar buildings.
- Architectural Bulletins**, Series of 5. $10\frac{1}{2} \times 8$ in. 28-64-44-28-44 pp. Illustrated. A series of five bulletins, each treating upon the application of lighting to one particular class of service. Hospitals; Banks and Office Buildings; Schools, Colleges and Y. M. C. A. Buildings; Church and Fraternal Buildings; Commercial Service.
- Special Hospital Catalog**. $10\frac{1}{2} \times 8$ in. 9 pp. Illustrated. Illustrates a special selection of fixture equipment for hospital use including types suitable for all outlets.
- Hart & Hegeman Mfg. Co.**, The, 342 Capitol Ave., Hartford, Conn.
The Line of Least Resistance. Catalog R. $10\frac{1}{2} \times 7\frac{1}{2}$ in. 152 pp. Illustrated. Complete display of switches, sockets, accessories and wiring devices with brief description.
- A new H & H Switch. Leaflet. $3\frac{1}{2} \times 6$ in. 4 pp. Illustrated. Illustrates a new H & H composition base push switch of De Luxe quality.
- Tumbler Switches**. Booklet. $3\frac{1}{2} \times 6$ in. 6 pp. Illustrated. Shows complete line of H & H Tumbler Switches.
- H & H Flexits**. Booklet. $8 \times 10\frac{1}{2}$ in. Illustrated. Shows new complete line of Flexits—places for lights. May be used for Wall Receptacles or Electric Fixtures.
- The Holtzer-Cabot Electric Co.**, Amory St., Boston 19, Mass.
Signaling Systems for Hospitals. Brochure. $8\frac{1}{2} \times 11$ in. 42 pp. Illustrated. Contains complete data covering Nurse's Call, Doctor's Call, "In" and "Out" Fire Alarm, Watchman's Clock and Telephone Systems.
- Signaling Systems for Schools**. Brochure. $8\frac{1}{2} \times 11$ in. 47 pp. Illustrated. Contains complete data covering Telephone Systems, Program Bells, Fire-Alarm Systems, Low Tension Power Plant and Laboratory Equipment.
- Kohler Co.**, Kohler, Wis.
Kohler Automatic Power and Light 110 Volt D. C. Booklet. 5×7 in. 32 pp. Illustrated. Describes a standard voltage automatic, electric power and light plant for isolated homes.
- Principle and Proof**. Booklet. 48 pp. Illustrated. Describes a standard voltage automatic electric power and light plant for isolated homes, for emergency auxiliary or permanent lighting in stores, theaters, churches and schools.
- Pick & Company, Albert**, 208 West Randolph St., Chicago, Ill.
School Cafeterias. Booklet. 9×6 in. Illustrated. The design and equipment of school cafeterias with photographs of installation and plans for standardized outfits.
- Kitchen Equipment**. Booklet. 9×6 in. Illustrated. Photographs and descriptions of Hotel, Club and Hospital kitchens with treatise on plans and equipment of efficient kitchens.
- Electric Kitchen Equipment**. Booklet. $8\frac{1}{2} \times 11\frac{1}{2}$ in. Illustrated. Photographs and descriptions of PIX "Master-Made" ranges, ovens, etc., for Hotels and Restaurants.
- Simplex Wire & Cable Co.**, 201 Devonshire St., Boston, Mass.
Simplex Manual Catalog and Reference Book. $6\frac{1}{4} \times 4\frac{1}{4}$ in. 92 pp. Contains in addition to information regarding Simplex products, tables and data for the ready reference of architects, electrical engineers and contractors.
- Specification No. 2053**. For Simcore Wires and Cables. Various sizes of Conductor-Rubber Insulation.
- Western Electric Co.**, 195 Broadway, New York, N. Y.
Western Electric Inter-Phones for Apartment Houses. Booklet. $5\frac{1}{4} \times 6\frac{1}{4}$ in. 16 pp. Illustrated. Illustrates and describes use of Inter-Phones in Apartment Houses.
- Installing and Maintaining Western Electric Inter-Phones**. In addition to giving general information on layout of system, details are supplied on individual Inter-Phone Systems, listing battery and wiring requirements.
- Westinghouse Electric & Mfg. Company**, East Pittsburgh, Pa.
Safety Switches. Folder F-4434 B. $3\frac{1}{2} \times 6$ in. 2 pp. The 100 per cent Safe Service Entrance Switch.
- Meter Service Switches**. Booklet F-4484. $3\frac{1}{2} \times 6$ in. 16 pp.
- Panel Boards**. Catalog 22A. $8\frac{1}{2} \times 11$ in. 16 pp. Illustrated.
- What Fans Are For**. Booklet F-4520. $3\frac{1}{2} \times 6$ in. 16 pp. Illustrated in color.

ELEVATORS

- A. B. See Elevator Company, Inc.**, 52 Vesey Street, New York, N. Y.
Current catalogue illustrated $8\frac{1}{2} \times 11$ in. Engineering information and layout form for all types of electric elevators.
- Kaestner & Hecht Co.**, Chicago, Ill.
Bulletin 500. Contains 32 pp. giving general information on passenger elevators for high buildings.
- Bulletin 530**. Interlocks for Passenger and Freight Elevators.
- Bulletin**. Signals for Passenger and Freight Elevators.

ELEVATORS—Continued

- Otis Elevator Company**, 260 Eleventh Ave., New York, N. Y.
Otis Push Button Controlled Elevators. Descriptive leaflets. $8\frac{1}{2} \times 11$ in. Illustrated. Full details of machines, motors and controllers for these types.
- Otis Geared and Gearless Traction Elevators of All Types**. Descriptive leaflets. $8\frac{1}{2} \times 11$ in. Illustrated. Full details of machines, motors and controllers for these types.
- Escalators**. Booklet. $8\frac{1}{2} \times 11$ in. 22 pp. Illustrated. Describes use of escalators in subways, department stores, theaters and industrial buildings. Also includes elevators and dock elevators.
- Richards-Wilcox Mfg. Co.**, Aurora, Ill.
Elevators. Booklet. $8\frac{1}{2} \times 11$ in. 24 pp. Illustrated. Describes complete line of "Ideal" elevator door hardware and checking devices, also automatic safety devices.
- Sedgwick Machine Works**, 151 West 15th St., New York, N. Y.
Catalog and descriptive pamphlets. $4\frac{1}{2} \times 8\frac{1}{2}$ in. 70 pp. Illustrated. Descriptive pamphlets on hand power freight elevators, sidewalk elevators, automobile elevators, etc.

FENCES

- The Stewart Iron Works Company**, Cincinnati, Ohio.
Book of Designs "C." 9×12 in. 80 pp. Illustrated. Book of designs illustrated from photographs of ornamental iron fence and entrance gates erected by us. Valuable to architects.

FIRE DOORS—See Doors, Windows and Trim, Metal

FIREPROOFING—See also Construction, Fireproof

- The General Fireproofing Company**, Youngstown, Ohio.
Fireproofing Handbook. 64 pp. $8\frac{1}{2} \times 11$ in. Illustrated. Gives methods of construction, specifications, data on Herringbone metal lath, steel tile, Trussit solid partitions, steel lumber, self-centering formless concrete construction.

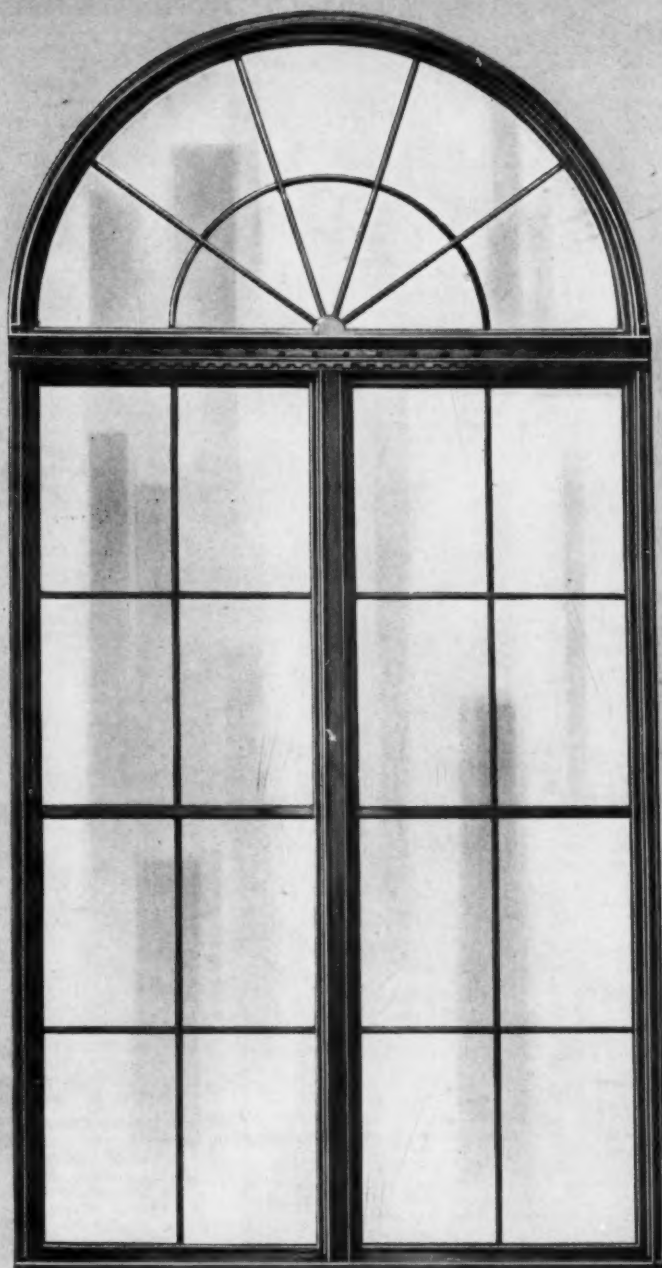
FLOOR HARDENERS (CHEMICAL)

- Sonneborn Sons, Inc.**, 116 Fifth Ave., New York, N. Y.
Lapidolith, the liquid chemical hardener. Complete sets of specifications for every building type in which concrete floors are used, with descriptions and results of tests.

FLOORING

- Armstrong Cork & Insulation Co.**, 132 24th St., Pittsburgh, Pa.
Linoleum Floors for Public and Semi-Public Buildings. $7\frac{1}{2} \times 10\frac{1}{2}$ in. 36 pp.
- Linoleum Floors for Residences**. $7\frac{1}{2} \times 10\frac{1}{2}$ in. 32 pp.
- Armstrong's Cork Tile**. Revised Edition. Booklet. 24 pp. 5×7 in. Illustrated in color. Contains complete specifications.
- Armstrong Cork Co.** (Linoleum Division), Lancaster, Pa.
Armstrong's Linoleum Floors. Catalog. $8\frac{1}{2} \times 11$ in. 36 pp. Color plates. A technical treatise on linoleum, including table of gauges and weights and specifications for installing linoleum floors.
- Decorative Linoleum Floors**. Portfolio of Color Plates. $11\frac{1}{4} \times 15$ in. 16 pp. Color plates.
- Armstrong's Linoleum Pattern Book**, 1925. Catalog. $3\frac{1}{2} \times 6$ in. 200 pp. Color Plates. Reproductions in color of all patterns of linoleum and cork carpet in the Armstrong line.
- Quality Sample Books**. Two books. $3\frac{1}{2} \times 5\frac{1}{2}$ in. Showing all gauges and thicknesses in the Armstrong line of linoleum.
- Detailed Directions for Laying and Caring for Linoleum**. Handbook. 5×7 in. 48 pp. Instructions for linoleum layers and others interested in learning most satisfactory methods of laying and taking care of linoleum.
- Business Floors**. Booklet. 6×9 in. 48 pp. Illustrated in color. Explains use of linoleum for offices, stores, etc., with reproductions in color of suitable patterns, also specifications and instructions for laying.
- Bonded Floors Company, Inc.**, 1421 Chestnut St., Philadelphia, Pa.
Gold-Seal Treadlite Tile. Booklet. $7\frac{1}{2} \times 10\frac{1}{2}$ in. 32 pp. Illustrated. An illustrated booklet showing Treadlite Tile installations and containing general information, specifications, etc., with reproductions of the product in color.
- Gold-Seal Rubber Tile Folder**. Folder $7\frac{1}{2} \times 10\frac{1}{2}$ in. 8 pp. Illustrated. A folder describing the usages and composition of Rubber Tile. Profusely illustrated with pictures of installations and reproductions of the product in color.
- Hospital Floors**. Description and advantages of using Gold-Seal Battleship Linoleum. Gold-Seal Treading Tile and Gold-Seal Rubber Tile in hospital construction insuring durable, noiseless, sanitary and attractive floors. Illustrated in color. $8 \times 10\frac{1}{2}$ in.
- Distinctive Floors**. A publication describing Gold-Seal Treadlite Tile, its composition, manufacture and method of installation. Illustrated in full color. $8 \times 10\frac{1}{2}$ in. 8 pp.
- Carter Bloxonend Flooring Co.**, Long Bldg., Kansas City, Mo.
Bloxonend Flooring. Booklet. $3\frac{1}{4} \times 6\frac{1}{4}$ in. 20 pp. Illustrated. Describes uses and adaptability of Bloxonend Flooring to concrete, wood or steel construction, and advantages over loose wood blocks.
- Specification Sheet**. 4 pp. $8\frac{1}{2} \times 11$ in. Illustrated. Standard Specifications in convenient form for Architects and Engineers.
- Lateral Nailing Specification**. Folder. $8\frac{1}{2} \times 3\frac{1}{4}$ in. 4 pp. Illustrated. Shows how this method of nailing eliminates embedded sleepers, wood sub-floor or nailing strips.
- What's in a Name?** Folder. $8\frac{1}{2} \times 11$ in. Illustrated. Enumerates advantages of a heavy service flooring that lays smooth and stays smooth.
- Duraflex Company, Inc.**, 11 Pleasant Street, Baltimore, Md.
Why They Used It in One of Boston's Finest Buildings. Typical of Character of One of the 13 Original States. Illustrated 4-page brochures, $5\frac{1}{4} \times 8\frac{1}{4}$ in. giving data on "Duraflex" floors.
- Permanent, Easy Tread Flooring**. Folder 4 pp. $8\frac{1}{2} \times 11$ in. on floor covering material.
- Specifications for Sub-Floors for "Duraflex"**. Folder. 11 pp. $8\frac{1}{2} \times 11$ in. on base for laying "Duraflex."
- Test of Floorings**. Folder. 2 pp. Report of Flooring Committee of American Hospital Association.
- Galassi Company**, 153 East 38th St., New York, N. Y.
Suggesting a Standard Specification for Terrazzo Work. Booklet. Specifications for the use of terrazzo.
- Muller Co., Franklyn R.**, Waukegan, Ill.
Asbestone Composition Flooring. Circular. $8\frac{1}{2} \times 11$ in. Descriptions and Specifications.

ANACONDA ARCHITECTURAL BRONZE



EXTERIOR View,
Bronze Window, Federal
Reserve Bank, New York.

Architects: York and
Sawyer, New York.

Fabricator: William H.
Jackson Company, New
York.

Anaconda Extruded
Bronze supplied by The
American Brass Company.

THE AMERICAN BRASS COMPANY

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Ansonia, Conn., Torrington, Conn.
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Hastings-on-Hudson, N.Y., Kenosha, Wis.

In Canada: ANACONDA AMERICAN BRASS LIMITED, NEW TORONTO, ONTARIO

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 102

FLOORING—Continued

- Norton Company**, Worcester, Mass.
Filing Folder. $8\frac{1}{2} \times 11\frac{1}{4}$ in. 27 pp. Illustrated with drawings. Specification data for architects.
- Rodd Company, The**, Century Bldg., Pittsburgh, Pa.
Redwood Block Floor. Booklet. 4×9 in. Illustrated. Contains technical information on Rodd Floors of California Redwood Blocks. Also specifications.
- U. S. Gypsum Co.**, Chicago.
Pyrobar Floor Tile. Folder. $8\frac{1}{2} \times 11$ in. Illustrated. Data on building floors of hollow tile, and tables on floor loading.

FURNACE.—See Heating Equipment

FURNITURE

- Allen, Louis L.**, 521 Madison Ave., New York, N. Y.
Booklet. $5 \times 7\frac{1}{2}$ in. Illustrated. Issued quarterly, listing many antique pieces of furniture, old oak and pine paneling and garden figures; fountains, bird baths, sundials, etc.
- American Seating Co.**, 14 E. Jackson Blvd., Chicago, Ill.
Ars Ecclesiastica Booklet. $8\frac{1}{2} \times 11$ in. 48 pp. Illustrations of church fittings in carved wood.
- Theater Chairs. Booklet. 6×9 in. 48 pp. Illustrations of theater chairs.
- Fain Manufacturing Company**, Norfolk, Virginia.
The Fain Fold Away Dining Room. Booklet. 4×11 in. Illustrated. Information to architects and builders on new folding devices with architect's specifications and views of construction. Concise description of merits, use and price.
- Kensington Mfg. Company**, 41 West 45th St., New York, N. Y.
Photographs and full description of hand-made furniture in all the period styles, furnished in response to a specific inquiry. Illustrated booklet indicative of the scope, character and decorative quality of Kensington furniture mailed on request.
- White Door Bed Company, The**, 130 North Wells Street, Chicago, Ill.
Booklet. $8\frac{1}{2} \times 11$ in. 20 pp. Illustrated. Describes and illustrates the use of "White" Door Bed and other space-saving devices.

GARDEN ACCESSORIES

- Davey Tree Expert Company, The**, 907 Elm St., Kent, Ohio.
When Your Trees Need The Tree Surgeon. Booklet. 16 pp. $8 \times 9\frac{1}{4}$ in. Illustrated. Lists and explains a number of serious tree troubles of common occurrence; contrasts the scientific methods used by properly trained and conscientious men to remedy these troubles with the work of unscrupulous or untrained men.

GLASS CONSTRUCTION

- Mississippi Wire Glass**, 220 Fifth Avenue, New York.
Mississippi Wire Glass. Catalog. $3\frac{1}{2} \times 8\frac{1}{2}$ in. 32 pp. Illustrated. Covers the complete line.
- Pittsburgh Plate Glass Co.**, Pittsburgh.
Glass, Paints, Varnishes and Brushes. Book. 9×11 in. 190 pp. An extremely fine treatise on the history, manufacture, and use of these commodities.
- Plate Glass Mfrs. of America**. First National Bank Bldg., Pittsburgh, Pa.
Plate Glass. Booklet. $5\frac{1}{4} \times 9\frac{1}{4}$ in. 12 pp. Describes manufacture and use of plate glass, with sizes.

GRANITE.—See Stone, Building

HARDWARE

- Cutler Mail Chute Company**, Rochester, N. Y.
Cutler Mail Chute Model F. Booklet. $4 \times 9\frac{1}{4}$ in. 8 pp. Illustrated.
- McCabe Hanger Manufacturing Company**, 425 West 25th St., New York, N. Y.
Special Folding and Accordion Door Hangers. Booklet. 6×9 in. 8 pp. Illustrated. Booklet with complete description of various types of folding and accordion door hangers. Full size details upon request.
- McKinney Mfg. Co.**, Pittsburgh, Pa.
McKinney Complete Garage Hardware Sets. Catalog. $6\frac{1}{4} \times 10$ in. 20 pp. Illustrated. Describes full line of complete garage hardware sets for all kinds of entrances, with views of typical entrances and sketches.
- McKinney Hinges and Butts. General Catalog. $6\frac{1}{4} \times 10$ in. Illustrates and describes complete line of McKinney wrought builders' hardware products, including hinges, butts, door hangers and track, latches, garage hardware and specialties.
- Richards-Wilcox Mfg. Co.**, Aurora, Ill.
Distinctive Garage Door Hardware. Booklet. $8\frac{1}{2} \times 11$ in. 65 pp. Illustrated. Complete information accompanied by data and illustrations on different kinds of garage door hardware.
- Sargent & Company**, New Haven, Conn.
Sargent Locks and Hardware. Architects' Edition. 9×12 in. 762 pp. Illustrated. The latest complete catalog of Locks and Hardware.
- Details to Which Standard Hardware Can Be Applied. Booklet. $6 \times 9 \times 12$ in. Illustrated. Treats with diagrams, portions of doors and windows to which hardware can be applied.
- Vonnegut Hardware Co.**, Indianapolis, Ind.
Von Duprin Self-Releasing Fire Exit Devices. Catalog. 12P. 8×11 in. 41 pp. Illustrated.
- Saving Lives. Booklet. $3\frac{1}{4} \times 6$ in. 16 pp. Illustrated. A brief outline why Self-Releasing Fire Exit Devices should be used.

HEATING EQUIPMENT

- Bryant Heater & Mfg. Co., The**, 962 East 72nd St., Cleveland, O.
Hand Book on Water Heating by Gas. $8\frac{1}{2} \times 11$ in. 16 pp. Illustrated. Bryant Gas Boilers. Bulletin 309, for AIA File No. 29 D2. Contains valuable information on hot water, steam and vapor heating; data to determine quickly the size of heating plant for any building; also dimensions, weights, fittings furnished and other data of interest. Other descriptive literature available. Comprehensive handbook in preparation.

HEATING EQUIPMENT—Continued

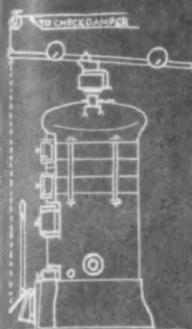
- Hand Book on House Heating by Gas. $8\frac{1}{2} \times 11$ in. 8 pp. Illustrated. Bryant Automatic Hot Water Storage Systems. Bulletin 308, for AIA File No. 30 C1. Contains complete information on water heating systems, weights, dimensions, etc. Other descriptive material available. Comprehensive handbook in preparation.
- James B. Clow & Sons**, 534 S. Franklin St., Chicago, Ill.
Gasteam. Catalog. 6×9 in. 16 pp. Illustrated. New radiator using gas for fuel.
- Cox Stove Company, Abram**, American and Dauphin Sts., Philadelphia, Pa.
Make Wintery Days Happy Days. Folder. $3\frac{1}{2} \times 6\frac{1}{4}$ in. 8 pp. Illustrated. Two folders. One describes in detail Novelty Marvel Warm Air Furnaces. The other shows the Pipeless Novelty Marvel.
- Novelty Boilers 76A. Booklet. $6\frac{1}{2} \times 3\frac{1}{4}$ in. 32 pp. Illustrated. Descriptive of entire line of boilers, including Novelty Round Boilers, Side-Feed Sectional Boilers 18-25-30-40 Series, and Carburetor Boilers, 30 and 40 Series; Novelty Water Heaters.
- Excelsio Specialty Works**, 119 Clinton St., Buffalo, N. Y.
Excelsio Water Heater. Booklet. 12 pp. 3×6 in. Illustrated. Describing the new Excelsio method of generating domestic hot water in connection with heating boilers. (Firepot Coil eliminated.)
- The Fulton Company**, Knoxville, Tenn.
Sylphon Temperature Regulators. Bulletin T-103. $8\frac{1}{2} \times 11$ in. 16 pp. Complete data on Sylphon temperature regulators for air and liquids. Catalog 100, complete line Sylphon Heating Specialties.
- Damper Regulators. Air and Vent Valves. Catalog No. 100. $3\frac{1}{4} \times 6\frac{1}{4}$ in. Sylphon Damper Regulators for steam, hot water and vapor systems. Sylphon Air and Vent Valves.
- Illinois Engineering Co.**, Racine Ave., at 21st St., Chicago, Ill.
Vapor Heat Bulletin 21. $8\frac{1}{2} \times 11$ in. 32 pp. Illustrated. Contains new and original data on Vapor Heating. Rules for computing radiation, pipe sizes, radiator tapings. Steam table showing temperature of steam and vapor at various pressures, also description of Illinois Vapor Specialties.
- Johnson Service Company**, 149 Michigan St., Milwaukee, Wis.
Regulation of Temperature and Humidity. Booklet. $11\frac{1}{4} \times 8\frac{1}{4}$ in. 64 pp. Illustrated. Describes Johnson system of pneumatic, automatic regulation of temperature and humidity, and illustrates thermostats, valves, air compressors, dampers and other parts.
- Johnson Electric Thermostats, Valves and Controllers. Booklet. $6\frac{1}{4} \times 3\frac{1}{2}$ in. 24 pp. Illustrated. Excellent plates showing electric thermostats and controllers.
- Kelsey Heating Company**, James St., Syracuse, N. Y.
Booklet No. 5. 4×9 in. 32 pp. Illustrated. A dealers' booklet showing the Kelsey Warm Air Generator Method of warming and distributing air. Gives dimensions, heating capacities, weights, kind of coal recommended and shows the mechanical and gravity systems of heating homes, churches and schools.
- Monroe Pipeless Booklet. $4\frac{1}{2} \times 8$ in. 20 pp. Illustrated.
- Monroe Tubular Heater. Booklet. $4\frac{1}{2} \times 8$ in. 20 pp. Illustrated.
- General Booklet giving capacities, dimensions, weights, etc. Syracuse Pipeless Booklet. $4\frac{1}{2} \times 8$ in. 12 pp. Illustrated. General Booklet giving sizes and capacities.
- Kewanee Boiler Co.**, Kewanee, Ill.
Kewanee on the Job. Catalog. $8\frac{1}{2} \times 11$ in. 80 pp. Illustrated. Showing installations of Kewanee boilers, water heaters, radiators, etc.
- Catalogue No. 78. 6×9 in. Illustrated. Describes Kewanee Fire-box Boilers with specifications and setting plans.
- Catalogue No. 79. 6×9 in. Illustrated. Describes Kewanee power boilers and smokeless tubular boilers with specifications.
- Ruud Manufacturing Company**, Pittsburgh, Pa.
Architects' Specification Folder. $9 \times 11\frac{1}{4}$ in. Complete specifications covering different types of gas water heaters. Conforms to A. I. A. filing system.
- Utica Heater Company**, Utica, N. Y.
Imperial Round and Square Boilers and Supplies. Catalog. $3\frac{1}{4} \times 6\frac{1}{2}$ in. Gives complete data on small heaters.
- Special Folders. $8\frac{1}{2} \times 11$ in. "Warmth and Comfort," describing the scientifically correct NEW IDEA pipeless furnaces, "SUPERIOR Warm Air Pipe Furnaces," a standard line of heating equipment for over forty years. "SUPER-SMOKELESS Pipe and Pipeless Furnaces," a new and remarkably efficient warm air heater, burning cheap soft coal without smoke—utilizing the principle of the Bunsen Burner.
- Utica Imperial SUPER-SMOKELESS Boiler. Catalog. $8\frac{1}{2} \times 11$ in. Consists of the following seven bulletins, either loose or bound together: (1) School Heating Bulletin. (2) Public Building Bulletin. (3) Theater Heating Bulletin. (4) Churches and Religious Institutions. (5) Residences, Apartments and Hotels. (6) Offices, Industrial Buildings and Garages. (7) Technical Bulletin describing patented Bunsen Burner design and construction of the SUPER-SMOKELESS BOILER, which burns the cheapest grades of soft coal smokelessly and operates equally well with hard coal, coke or fuel oil.

HEAT REGULATORS.—See Heating Equipment

HEATING AND VENTILATING

- Hoffman Specialty Company, Inc.**, 512 Fifth Ave., New York, N. Y.
Controlled Heat Booklet. $5\frac{1}{2} \times 8\frac{1}{4}$ in. 28 pp.
The principles of vapor vacuum heat described in simple language for the consumer or layman.
- Locking the Door Against the Heat Thief. Booklet. $5\frac{1}{4} \times 8\frac{1}{4}$ in. 16 pp.
Describes No. 2 Hoffman Vacuum Valves and the principle of "Vacuum-izing" a single pipe steam heating system in consumer language.

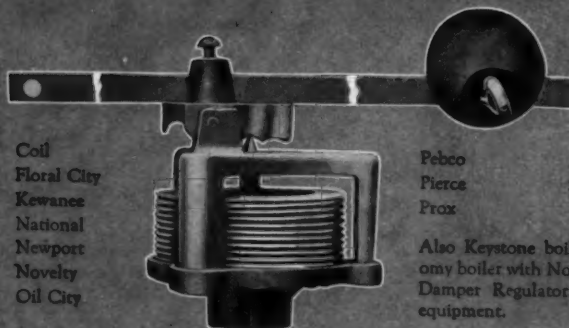
Standard Equipment On All These Steam Boilers



Floral City

Abco
Abendroth
Ames
Bernhard
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Coatesville

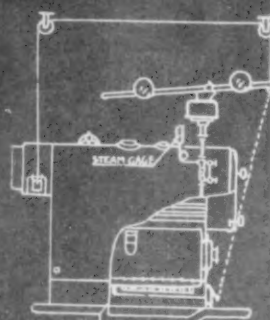
Coil
Floral City
Kewanee
National
Newport
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Pebco
Pierce
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Simplex

Also Keystone boiler and Economy boiler with No. 924 Sylphon Damper Regulator as standard equipment.



Birchfield

No. 88 Sylphon Damper Regulator for low pressure steam boilers

Every Coal Fired Boiler Burns Coal and "Air"

—the coal costs money—the air is FREE

A BOILER, that in the language of the householder, is "a hog for coal," is bad business for both the householder and the boiler manufacturer. The 21 leading manufacturers who have standardized on equipping their boilers with Sylphon Damper Regulators know that these regulators will feed just the right amount of air to economically burn a minimum of coal, obviate all overheating or underheating, and prevent for all time the necessity of running up and down stairs to adjust drafts.

The secret of the Sylphon accuracy is the Sylphon Bellows

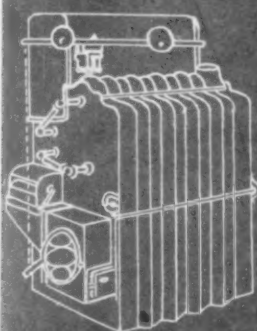
This bellows, drawn from a flat sheet of metal *without soldered seam* is at once the most flexible and powerful expansion member known to engineers. There is only *one* Sylphon bellows. It is made by The Fulton Company of Knoxville, Tennessee, and is used exclusively in Sylphon Damper Regulators.

Other famous Sylphon Damper Regulators are

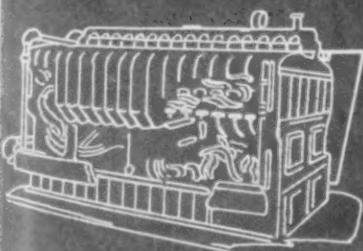
No. 45-A for hot-water boilers; No. 925 for vapor heating systems; No. 924 for low pressure (down to 6 ozs.) steam boilers.

All Sylphon Damper Regulators are made in standard iron pipe sizes and may be used on any make of boiler. Jobbers carry stocks.

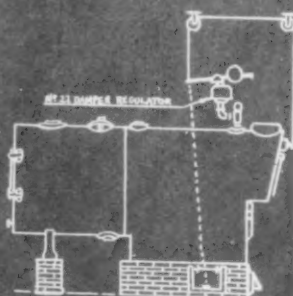
Ask for Bulletin DR



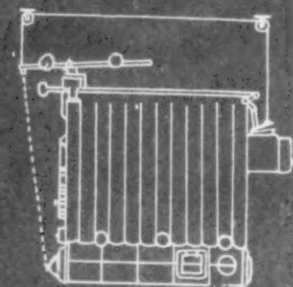
Richardson



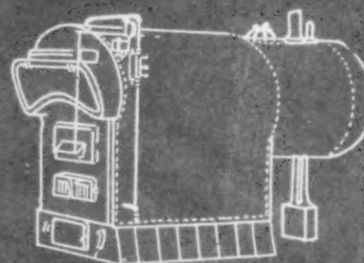
Newport



Oil City



National



Kewanee

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Canadian representatives: Darling Bros., Ltd., 120 Prince Street, Montreal, Canada

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 104

HEATING AND VENTILATING—Continued

- Thatcher Furnace Co.**, 39-41 St. Francis St., Newark, N. J.
 Thatcher Heating and A Few Installations. 25 pp. 6 x 9 in. Illustrated. Contains photos. of various types of buildings in which Thatcher Heaters are installed together with cuts and description of Thatcher Heaters.
 History of Heat. 15 pp. 8 x 5 in. Illustrated. Tracing the evolution of heat from its earliest stages.
- United States Radiator Corporation**, Detroit, Mich.
 The Complete Line Catalog. 6 1/4 x 3 1/4 in. 270 pp. Illustrated. Giving complete information and engineering data on Capital and Winchester Boilers.

HOISTS—See Ash Hoists

HOLLOW TILE—See Tile, Hollow

HOSPITAL EQUIPMENT

- Betz Company, Frank S.**, Hammond, Ind. 30 E. Randolph St., Chicago, Ill.
 Hospital Book. 7 1/4 x 10 1/4 in. 212 pp. Illustrated profusely. Lists and describes with prices and illustrations a complete line of steel hospital furniture.
- The International Nickel Company**, 67 Wall St., New York, N. Y.
 Hospital Applications of Monel Metal. Booklet. 8 1/2 x 11 1/4 in. 16 pp. Illustrated. Gives types of equipment in which Monel Metal is used, reasons for its adoption, with sources of such equipment.
- The Kny-Scheerer Corporation of America**, 119 Seventh Ave., New York.
 Hospital Equipment, 16th Edition. 7 1/4 x 10 1/4 in. 232 pp. Illustrated. Complete description of Hospital and Surgical Furniture, Hospital Appliances including Operating Tables, Cabinets, Sterilizers for Water, Dressing and Instruments, also Hydrotherapeutic Apparatus.
 Surgical Sundries. Second Edition. Booklet. 7 1/4 x 10 1/4 in. 48 pp. Illustrated. A complete line of glassware, enamelware, rubber goods, restraint apparatus, instrument sterilizers, sputum cups, wheel chairs and sick room comforts.
 Electro-Medical. 25th Edition. Booklet. 7 1/4 x 10 1/4 in. 160 pp. Illustrated. A complete line of Albee Bone Sets, Apparatus for AC and DC, Cystoscopes, Heat Magnets, Vibrators, Compressors, Electric Light Baths, High Frequency Apparatus and X-Ray Apparatus and Accessories.

INCINERATORS

- The Kerner Incinerator Company**, 1029 Chestnut St., Milwaukee, Wis.
 The Kernerator. Booklet. 5 1/4 x 9 1/4 in. 40 pp. Illustrated. Describes principle and design of the Kernerator, guarantee and service, also gives illustrations of buildings where it has been installed, and testimonials.
- Sanitary Elimination of Household Waste**. Booklet. 4 x 9 in. 16 pp. Illustrated. Shows process, installations and advantages of the Kernerator.
- Sanitary Disposal of Waste in Hospitals**. Booklet. 4 x 9 in. 12 pp. Illustrated. Shows how this necessary part of hospital service can be taken care of by the Kernerator.

INSULATION

- Armstrong Cork & Insulation Co.**, Pittsburgh, Pa.
 Corkboard Insulation. Brochure. 6 1/4 x 9 1/4 in. Illustrated. Fully discusses properties of corkboard and its uses in insulation of cold storage rooms, refrigerators, residences, apartment houses.
- Bishopric Manufacturing Co.**, 103 Este Ave., Cincinnati, Ohio.
 Specifications and Working Details. Booklet. 7 1/4 x 10 1/4 in. Illustrated. Contains plainly written instructions for the use of stucco, stucco base, plaster base and insulation base.
- Philip Carey Co.**, The, Cincinnati, Ohio.
 Carey Asbestos and Magnesite Products. Catalog. 6 x 9 in. 72 pp. Illustrated.
- Johns-Manville, Inc.**, Madison Ave., and 41st St., New York, N. Y.
 Johns-Manville Service to Power Users. Catalog. 8 1/2 x 11 in. 150 pp. Illustrated. Contains valuable data on all forms of insulation, packages, steam traps, high temperature cements, brake locks and linings, also general technical data.
- United States Mineral Wool Co.**, 280 Madison Ave., New York.
 The Uses of Mineral Wool in Architecture. Booklet. 5 1/4 x 6 1/4 in. 24 pp. Illustrated. Describes properties of mineral wool as insulation against heat, frost, sound. Specifications and section drawing for use as a fireproofing. Rules for estimate and cost.

KITCHEN EQUIPMENT

- Betz Company, Frank S.**, Hammond, Ind. 30 E. Randolph St., Chicago, Ill.
 Kitchunit. Booklet. 7 x 10 1/4 in. 4 pp. Illustrated. This illustrates and describes, including specifications, the Betzco All-Steel Kitchunits. A space-saving equipment that lowers building costs.
- Colt's Patent Fire Arms Mfg. Company**, Hartford, Conn.
 AUTOSAN Dish and Silver Cleaning Machines. Booklets. 6 x 9 in. Describing rotary table type and conveyor type machines.
- Wm. M. Crane Company**, 16-20 W. 32nd St., New York, N. Y.
 VULCAN Gas Ranges and Appliances. Booklet. 5 x 8 in. 50 pp. Illustrated. Describes complete line, including VULCAN SMOOTH TOP Compact Cabinet Gas Ranges for kitchens in the home.
- VULCAN Gas Equipment** for Hotels, Hospitals, Restaurants, etc. Booklet. 5 x 8 in. 45 pp. Illustrated. Equipment for heavy-duty cooking requirements, with information of value to architects in planning kitchens.
- The International Nickel Company**, 67 Wall St., New York, N. Y.
 Hotels, Restaurants and Cafeteria Applications of Monel Metal. Booklet. 8 1/2 x 11 in. 32 pp. Illustrated. Gives types of equipment in which Monel Metal is used, with service data and sources of equipment.

KITCHEN EQUIPMENT—Continued

- Pick & Company, Albert**, 208 W. Randolph St., Chicago, Ill.
 School Cafeteria. Portfolio. 17 x 11 in. 44 pp. Illustrated. An exhaustive study of the problems of school feeding, with copious illustrations and blue prints. Very valuable to the architect.
- School Cafeterias**. Booklet. 9 x 6 in. Illustrated. The design and equipment of school cafeterias with photographs of installation and plans for standardized outfits.
- Kitchen Equipment**. Booklet. 9 x 6 in. Illustrated. Photographs and descriptions of Hotel, Club and Hospital kitchens with treatise on plans and equipment of efficient kitchens.
- Electric Kitchen Equipment**. Booklet. 8 1/2 x 11 1/2 in. Illustrated. Photographs and descriptions of PIX "Master-Made" ranges, ovens, etc., for Hotels and Restaurants.
- Hotel, Apartment Building, Club and Institution Installations**. Portfolio. 17 x 11 in. 100 pp. Shows, mostly by plates, how the Albert Pick Company equips hotels completely from top to bottom.
- Equipment for Cafeterias, Lunch Rooms, Restaurants, and Dining Rooms**. Portfolio. 17 x 11 in. 86 pp. Illustrated. The last word in Cafeteria equipment to meet all requirements.
- Thatcher Furnace Co.**, 39-41 St. Francis St., Newark, N. J.
 Range with Personality. 15 pp. 8 x 5 in. Illustrated. Explains the famous Thatcher "Twin-Fire" combination coal and gas range.
- * Thatcher is the Heater for that Building. 8 pp. 8 x 9 in. Illustrated. Contains cuts, dimensions, and descriptions of Thatcher Heaters for architects' use.

LABORATORY EQUIPMENT

- Kewaunee Manufacturing Company**, 141 Lincoln St., Kewaunee, Wis.
 Kewaunee Book of Laboratory Furniture. Catalog. 7 x 10 in. 408 pp. Illustrated. Science and Vocational Laboratory Furniture for schools, colleges, technical institutes, hospitals, etc., including floor plans, illustrations of buildings and equipped laboratories, illustrations of equipment engineering data for mechanical ventilation and illustrations of special plumbing fixtures for laboratory use.

LANTERNS

- Todhunter, Arthur**, 414 Madison Ave., New York.
 Hand Wrought Lanterns. Booklet. 5 1/4 x 6 1/4 in. 20 pp. Illustrated in Black and White. With price list. Lanterns appropriate for exterior and interior use, designed from old models and meeting the requirements of modern lighting.

LATH, METAL AND REINFORCING

- The General Fireproofing Company**, Youngstown, Ohio.
 Herringbone Metal Lath Handbook. 8 1/2 x 11 in. 32 pp. Illustrated. Standard specifications for Cement Stucco on Herringbone Rigid Metal Lath and interior plastering.
- Milwaukee Corrugating Co.**, Milwaukee, Wis.
 The Milcor Manual. Booklet 8 1/2 x 11 in. 64 pp. Illustrated. Covers Milcor methods and materials, metal lath, corner beads, steel domes, channels, etc.
- National Steel Fabric Company**, Pittsburgh, Pa.
 Folder. 8 1/2 x 11 in. 6 pp. Illustrated. Describes National Stucco-Plaster Reinforcement, a base for exterior stucco and interior plastering, composition flooring, etc., with photographs and drawings.
- Northwestern Expanded Metal Co.**, 934 Old Colony Building, Chicago, Ill.
 Fireproof Construction Catalog. 6 x 9 in. 72 pp. Illustrated. Hand book of practical suggestions for architects and contractors, Describing Nemco Expanded Metal Lath.

LAUNDRY CHUTES

- The Pfaudler Company**, 217 Cutler Building, Rochester, N. Y.
 Pfaudler Glass-Lined Steel Laundry Chutes. Booklet. 5 1/4 x 7 1/4 in. 16 pp. Illustrated. A beautifully printed brochure describing in detail with architects' specifications THE PFAUDLER GLASS LINED STEEL LAUNDRY CHUTES. Contains views of installations and list of representative examples.

MAIL CHUTES

- Cutler Mail Chute Company**, Rochester, N. Y.
 Cutler Mail Chute Model F. Booklet. 4 x 9 1/4 in. 8 pp. Illustrated.

MANTELS

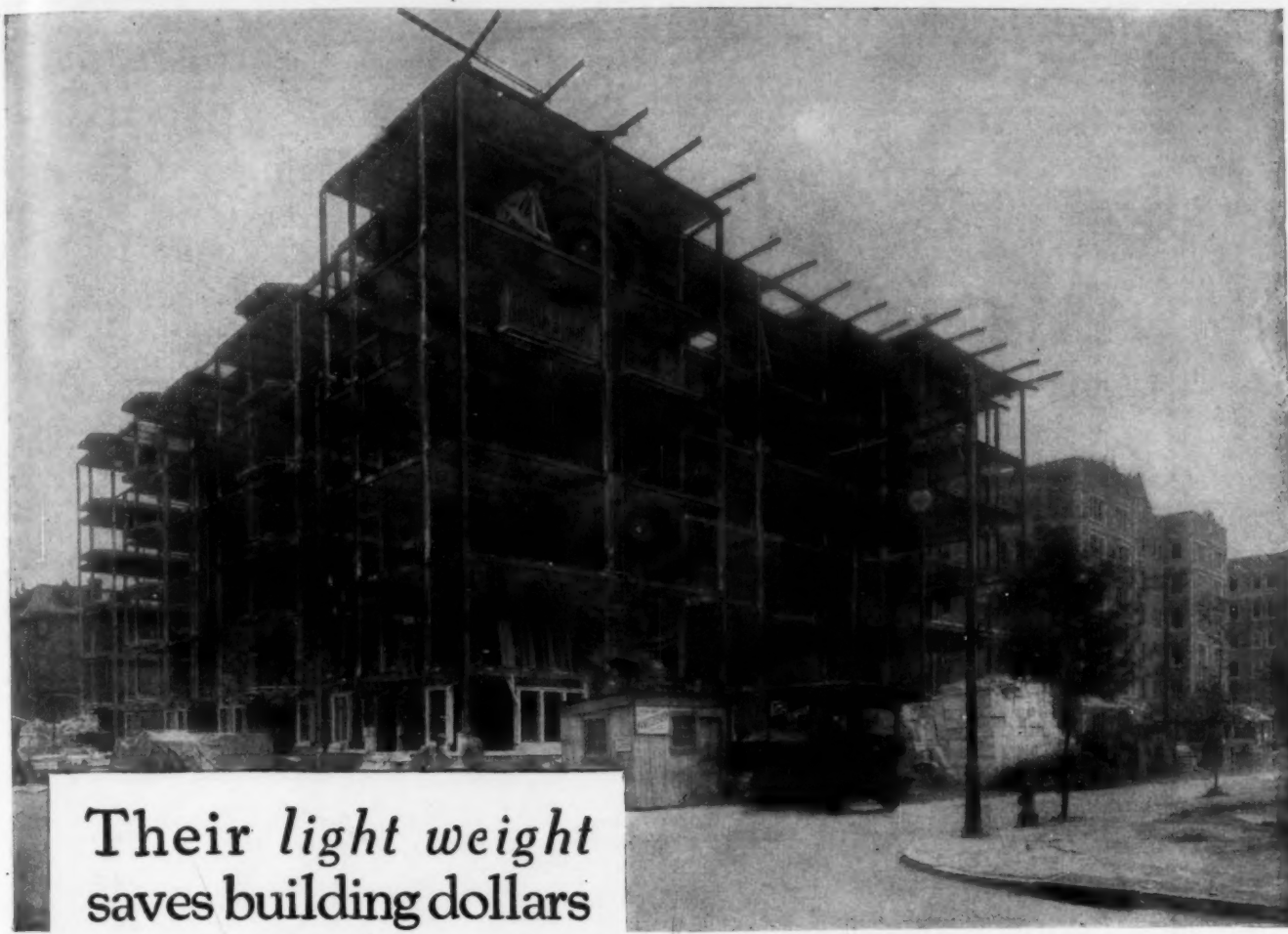
- Arthur Todhunter**, 414 Madison Ave., New York, N. Y.
 Mantels and Fireplace Equipment. Booklet. 8 1/2 x 11 in. Illustrated. Separate sheet plates showing mantels installed and furnished, also andirons and grates grouped with suitable pieces, also lanterns, weather-vanes and hand-wrought hardware. All sizes and descriptions given on each plate.

MARBLE

- The Georgia Marble Company**, Tate, Ga. New York Office, 1328 Broadway.
 Why Georgia Marble is Better. Booklet. 3 1/4 x 6 in. Gives analysis, physical qualities, comparison of absorption with granite, opinions of authorities, etc.
- Convincing Proof**. Booklet. 3 1/4 x 6 in. 8 pp. Classified list of buildings and memorials in which Georgia Marble has been used, with names of Architects and Sculptors.

METAL LATH—See Lath, Metal and Reinforcing METALS

- American Sheet & Tin Plate Co.**, Frick Building, Pittsburgh, Pa.
 Reference Book. Pocket Ed. 2 1/2 x 4 1/2 in. 168 pp. Illustrated. Covers the complete line of Sheet and Tin Mill Products.
- Apollo and Apollo-Keystone Galvanized Sheets**. Catalog. 8 1/2 x 11 in. 20 pp. Illustrated.
- Research on the Corrosion Resistance of Copper Steel**. Booklet. 8 1/2 x 11 in. 24 pp. Illustrated. Technical information on results of atmospheric corrosion tests of various sheets under actual weather conditions.



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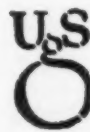
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SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 106

METALS—Continued

- Chase Metal Works**, Waterbury, Conn.
How to Order Brass. Booklet. 8 1/4 x 5 1/2 in. Illustrated. Tells just how to order brass—about alloys, tempers, tolerances most suitable for various uses. Warns against the usual mistakes and troubles in ordering. Contains complete tables of alloys, tempers, tolerances, uses, etc.
- Chase Diamond Booklet**. 1 1/4 x 9 in. 8-16 pp. Illustrated. Periodical house organ issued once a month or so. Contains articles, pictures, news items of interest to customers, employees and brass industry in general. Ask to be put on the mailing list.
- The International Nickel Company**, 67 Wall St., New York, N. Y.
The Choice of a Metal. Booklet. 6 1/4 x 3 1/4 in. 16 pp. Illustrated. Monel Metal—its qualities, use and commercial forms, briefly described.

METAL TRIM—See Doors and Trim, Metal

MILL WORK—See also Wood

- Curtis Companies Service Bureau**, Clinton, Iowa.
Architectural Interior and Exterior Woodwork. Standardized. Book. 9 x 1 1/4 in. 240 pp. Illustrated. This is an Architects' Edition of the complete catalog of Curtis Woodwork, as designed by Trowbridge & Ackerman. Contains many color plates.
- Better Built Homes**, Vols. XV-XVIII incl. Booklet. 9 x 12 in. 40 pp. Illustrated. Designs for houses of five to eight rooms, respectively, in several authentic types, by Trowbridge & Ackerman, architects for the Curtis Companies.
- Curtis Details**. Booklet. 19 1/2 x 23 1/2 in. 20 pp. Illustrated. Complete details of all items of Curtis woodwork, for the use of architects.
- Roddie Lumber & Veneer Company**, Marshfield, Wis.
Roddie Doorman. Booklet. 10 1/4 x 7 1/4 in. 12 pp. Illustrated. Describes and illustrates the use of Roddie Doors for residences, clubs, hotels, etc.
- Hartmann-Sanders Company**, 2155 Elston Ave., Chicago, Ill.
Column Catalog. 7 1/2 x 10 in. 48 pp. Illustrated. Contains prices on columns 6 to 36 in. diameter, various designs and illustrations of columns and installations.
- The Pergola Catalog**. 7 1/2 x 10 in. 64 pp. Illustrated. Contains illustrations of pergola lattices, garden furniture in wood and cement, garden accessories.

MORTAR COLORS

- Clinton Metallic Paint Co.**, Clinton, N. Y.
Clinton Mortar Colors. Folder. 8 1/2 x 11 in. 4 pp. Illustrated in color, gives full information concerning Clinton Mortar Colors with specific instructions for using them.
- Color Card**. 6 1/2 x 3 1/4 in. Illustrates in color the ten shades in which Clinton Mortar Colors are manufactured.

OFFICE SUPPLIES

- Chas. M. Higgins & Co.**, 271 Ninth St., Brooklyn, N. Y.
Descriptive Catalog. 3 1/2 x 5 1/2 in. 27 pp. Illustrated. Contains description and prices of Higgins Inks and Adhesives, color card illustrating various colors of the drawing inks supplied separate, size 3 1/2 x 6 1/4.

PAINTS, STAINS, VARNISHES AND WOOD FINISHES

- Cabot, Inc.**, Samuel, Boston, Mass.
Cabot's Creosote Stains. Booklet. 4 x 8 1/2 in. 16 pp. Illustrated.
- Eagle-Picher Lead Company**, The, 208 S. La Salle St., Chicago, Ill.
Specifications for Painting Structural Steel and Iron. Booklet. 9 1/4 x 11 1/2 in. 7 pp. Not illustrated. A set of specifications which embody the latest development in this field as revealed by the research department of The Eagle-Picher Lead Company in the light of their eighty-one years' experience, enclosed in folder 13 x 2 in., ready for filing.
- Fighting Rust with Sublimed Blue Lead**. Book. 80 pp. Illustrated. 5 1/4 x 8 1/4 in. An excellent addition to one's technical library, well bound in a stiff cover. An assemblage of scientific facts concerning the theory of corrosion of iron and steel and the prevention of rust with Sublimed Blue Lead.
- Chemical Analysis of Lead and Its Compounds**. Book. 3 1/2 x 8 1/2 in. 160 pp. Illustrated. A treatise on the latest methods of analysis adopted by the leading laboratories which must examine lead and its compounds from an analytical standpoint.
- Lead Tree Chart**. 9 x 11 1/4 in. 1 p. Framed Chart. Not illustrated. A chart reflecting all the uses of lead, from crude ore to the finished products.
- Zinc Tree Chart**. 9 x 11 1/4 in. 1 p. Framed Chart. Not illustrated. A chart reflecting all the uses of zinc—from the ore to the finished product.
- Rust-proofing Pamphlet**. 3 x 5 in. 16 pp. Illustrated. Of interest to anyone connected in any way with steel construction.
- The Glidden Company**, Cleveland, Ohio.
More Daylight. 8 x 10 1/2 in. 20 pp. Portraying by illustrations and text the need and methods of modern mill painting.
- The Hockaday Company**, 1823 Carroll Ave., Chicago, Ill.
Paint Mileage. Book. 8 x 10 1/2 in. 56 pp. Illustrated. A reference book on interior painting. Describes use of paint over all sorts of surfaces, with illustrations of buildings where Hockaday has been specified. Hockaday service explained.
- Solving Your Paint Problems**. Booklet. 8 1/2 x 11 in. 44 pp. Illustrated. Describes use of Hockaday Paint in Industrial Buildings, particularly in textile mills. Details of Hockaday service and specifications.
- Martin Varnish Co.**, 2500 Quarry St., Chicago, Ill.
Architectural Specifications. Booklet. 8 1/2 x 11 in. 20 pp. Illustrated. Complete guide for Architects in specifying Martin Varnish products.
- Your Floors**. Booklet. 5 x 7 in. 20 pp. Illustrated. Explains fully how to finish all kinds of floors and woodwork with Martin's Pure Varnish.
- National Lead Company**, 111 Broadway, New York, N. Y.
Handy Book on Painting. Book. 5 1/2 x 3 1/4 in. 100 pp. Gives directions and formulae for painting various surfaces of wood, plaster, metals, etc., both interior and exterior.
- Red Lead in Paste Form**. Booklet. 6 1/4 x 3 1/4 in. 16 pp. Illustrated. Directions and formulae for painting metals.

PAINTS, STAINS, VARNISHES & WOOD FINISHES—Continued

- Came Lead**. Booklet. 8 1/4 x 6 in. 12 pp. Illustrated. Describes various styles of lead comes.
- Cinch Anchoring Specialties**. Booklet. 6 x 3 1/4 in. 20 pp. Illustrated. Describes complete line of expansion bolts.
- New Jersey Zinc Company**, 160 Front St., New York, N. Y.
Zinc as a Paint Pigment. Technical treatise on the subject, with illustrations and reports of tests. 24 pp. 6 x 9 in.
- Mapaz No. 1 Painting Handbook**. Pocket size combination handbook and notebook containing valuable information on Zinc Oxide and its use in paint. Other data of interest to architects, including lace stencils, color formulae, etc.
- Pittsburgh Plate Glass Co., Pittsburgh**.
Glass, Paints, Varnishes and Brushes. Book. 9 x 11 in. 190 pp. An extremely fine treatise on the history, manufacture, and use of these commodities.
- The Ripolin Company**, Cleveland, Ohio.
Ripolin Specifications. Book. 8 x 10 1/4 in. 12 pp. Complete specifications and general instructions for the application of Ripolin, the original Holland enamel paint. Also directions for proper finishing of wood, metal, plaster, concrete, brick and other surfaces. Why Ripolin Has an International Reputation. 8 x 10 1/4 in. 24 pp. Designed for the architect's files to illustrate the many varied uses of Ripolin Enamel Paint in all parts of the world. Profusely illustrated.
- Ruberoid Co.**, The (formerly the Standard Paint Co.), 95 Madison Avenue, New York, N. Y.
Preservative Coating. Booklet. 6 x 9 in. 15 pp. Illustrated. Presents in a concise manner the properties and uses of the Ruberoid Company's various paint preparations.
- Sherwin-Williams Company**, 601 Canal Rd., Cleveland, Ohio.
Painting Concrete and Stucco Surfaces. Bulletin No. 1. 8 1/2 x 11 in. 8 pp. Illustrated. A complete treatise with complete specifications on the subject of Painting of Concrete and Stucco Surfaces. Color chips of paint shown in bulletin.
- Enamel Finish for Interior and Exterior Surfaces**. Bulletin No. 2. 8 1/2 x 11 in. 12 pp. Illustrated. Thorough discussion including complete specifications for securing the most satisfactory enamel finish on interior and exterior walls and trim.
- Painting and Decorating of Interior Walls**. Bulletin No. 3. 8 1/2 x 11 in. 20 pp. Illustrated. An excellent reference book on Flat Wall Finish including texture effects which are taking the country by storm. Every architect should have one on file.
- Protective Paints for Metal Surfaces**. Bulletin No. 4. 8 1/2 x 11 in. 12 pp. Illustrated. A highly technical subject treated in a simple, understandable manner.
- Sonneborn Sons, Inc.**, L., Dept. 4, 116 Fifth Avenue, New York.
Paint Specifications. Booklet. 8 1/2 x 10 1/4 in. 4 pp.

PANELING—See Millwork

PARTITIONS

- Circle "A" Products Corporation**, Champaign, Ill.
Catalog. 11 1/4 x 8 1/4 in. 28 pp. Illustrated. Gives information data and illustration of Circle "A" Sectional Office Partitions.
- Erection Instructions for Ceiling Height Partitions, Sectional and Removable**. Folder. 8 1/2 x 11 in. Illustrated with drawings.
- Erection Instructions for Seven-Foot Partitions, Sectional and Removable**. Folder. 8 1/2 x 11 in. Illustrated with drawings.
- Improved Office Partition Company**, 25 Grand St., Elmhurst, L. I.
Telesco Partition. Catalog. 8 1/2 x 11 in. 14 pp. Illustrated. Shows typical offices laid out with Telesco partitions, cuts of finished partition units in various woods. Gives specifications and cuts of buildings using Telesco.
- Detailed Instructions for erecting Telesco Partitions**. Booklet. 24 pp. 8 1/2 x 11 in. Illustrated. Complete instructions, with cuts and drawings, showing how easily Telesco Partition can be erected.
- Richards-Wilcox Mfg. Co.**, Aurora, Ill.
Partitions. Booklet. 7 x 10 in. 32 pp. Illustrated. Describes complete line of track and hangers for all styles of sliding, parallel accordion and flush door partitions.
- U. S. Gypsum Co.**, Chicago.
Pyrobar Partition and Furring Tile. Booklet. 8 1/2 x 11 in. 24 pp. Illustrated. Describes use and advantages of hollow tile for inner partitions.
- Wilson Corporation**, J. G., 11 East 36th Street, New York, N. Y.
Sectionfold and Rolling Partitions and Hygienic School Wardrobes. Catalog No. 37. Booklet 8 1/2 x 11 in. 40 pp. Illustrated. Describes the uses of rolling and sectional partitions, particularly in schools and churches. Also the installation of Wilson school wardrobes.

PIPE

- American Brass Company**, Waterbury, Conn.
Bulletin B-1. Brass Pipe for Water Service. 8 1/2 x 11 in. 28 pp. Illustrated. Gives schedule of weights and sizes (I.P.S.) of seamless brass and copper pipe, shows typical installations of brass pipe, and gives general discussion of the corrosive effect of water on iron, steel and brass pipe.
- A. M. Byers Company**, 235 Water St., Pittsburgh, Pa.
Bulletin 26-A. What Is Wrought Iron? 8 x 10 1/4 in. 40 pp. Illustrated. Descriptions of materials and processes employed in manufacturing Byers genuine wrought iron pipe. Factors influencing corrosion. Gives table of pipe sizes, weights, dimensions, tests, etc., and tabulated records of the life of iron and steel pipe in various kinds of service.
- Bulletin 30**. An Investigation of Pipe Corrosion in Hot Water Service. 8 x 10 1/4 in. 20 pp. Illustrated. Shows service records of iron, steel and brass pipe used for hot and cold water supply lines in 129 Pittsburgh apartment buildings.
- Bulletin 32**. Corrosion of Wrought Iron, Cast Iron and Steel Pipe in House Drainage Systems. 8 x 10 1/4 in. 32 pp. Illustrated. Data obtained through investigations conducted in New York and Chicago by Dr. Wm. P. Gerhardt, C. E. and Thomas J. Claffy, Asst. Chief San. Inspector, City of Chicago.
- Bulletin 38**. The Installation Cost of Pipe. 32 pp. 8 x 10 1/4 in. Illustrated. Cost analysis of 20 different pipe installations, in power and industrial plants, office buildings, hotels, residences, etc.



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Charles E. Ochlschlager, Architect

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Complete Specifications, Page 1352, Sweet's Catalog

THE HOCKADAY COMPANY, 1223-1229 Carroll Ave., CHICAGO

HOCKADAY

THE WASHABLE PAINT FOR ALL INTERIORS

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 108

PIPE—Continued

- Chase Metal Works, Waterbury, Conn.**
Why Brass Pipe. Booklet. $6\frac{1}{4} \times 3\frac{3}{4}$ in. 6 pp. Small pamphlet showing advantages of brass pipe in concise form, together with table of standard sizes and weights.
- Clow & Sons, James B., 534 S. Franklin St., Chicago, Ill.**
Catalog "A," $4 \times 6\frac{1}{2}$ in. 700 pp. Illustrated. Shows a full line of steam, gas and water works supplies.
- National Tube Co., Frick Building, Pittsburgh, Pa.**
"National" Bulletin No. 2. Corrosion of Hot Water Pipe. ($8\frac{1}{2} \times 11$ in. 24 pp.) Illustrated. In this bulletin is summed up the most important research dealing with hot water systems. The text matter consists of seven investigations by authorities on this subject.
- "National" Bulletin No. 3. The Protection of Pipe Against Internal Corrosion. ($8\frac{1}{2} \times 11$ in. 20 pp.) Illustrated. Discusses various causes of corrosion, and details are given of the deactivating and deaerating systems for eliminating or retarding corrosion in hot water supply lines.
- "National" Bulletin No. 25. "National" Pipe in Large Buildings. $8\frac{1}{2} \times 11$ in. 88 pp. This bulletin contains 254 illustrations of prominent buildings of all types, containing "National" Pipe and considerable engineering data of value to architects, engineers, etc.
- Modern Welded Pipe. Book of 88 pages ($8\frac{1}{2} \times 11$ in.), profusely illustrated with halftone and line engravings of the important operations in the manufacture of pipe.
- Reading Iron Company, Reading, Pa.**
Reading Genuine Wrought Iron Pipe in the Making and in Service. Bulletin No. 1. $8\frac{1}{2} \times 11$ in. 32 pp. Illustrated. History of the Reading Iron Company. Origin of wrought iron—description of each process of manufacture of both butt-weld and lap-weld pipe—Reading Pipe in various fields.
- Book of Standards. Booklet. 5×7 in. 48 pp. Illustrated. Complete tables showing dimensions, tests and list prices on each of the 552 different kinds of Reading Tubular goods. Two simple tests for distinguishing genuine wrought iron pipe.
- The Painted Molecule. Booklet. 4×9 in. 8 pp. Illustrated. A brief, non-technical description of the reasons for the longer life of Reading Iron Pipe, with instances of actual service.
- The Ultimate Cost. Booklet. $5\frac{1}{4} \times 7\frac{3}{4}$ in. 24 pp. Illustrated in two colors. A comparison in actual figures of the initial cost and the ultimate cost of plumbing and heating systems in several kinds of homes.
- Grinnell Company, 285 West Exchange Street, Providence, R. I.**
Grinnell Bulletin Booklet. $10\frac{1}{2} \times 7\frac{3}{4}$ in. Illustrated. Issued monthly. Describes and illustrates the different Grinnell products.

PLUMBING EQUIPMENT

- American Brass Company, Waterbury, Conn.**
Benedict Nickel. Illustrated pamphlet descriptive of Benedict Nickel White Metal for high grade plumbing fixtures.
- Brunswick-Balke-Collender Co., 623 S. Wabash Ave., Chicago, Ill.**
Whale-bone-ite Seat. Booklet. $3\frac{1}{2} \times 6\frac{1}{4}$ in. 4 pp. Illustrated.
- Clow & Sons, James B., 534 S. Franklin Street, Chicago, Ill.**
Catalog "M," $9\frac{1}{4} \times 12$ in. 184 pp. Illustrated. Shows complete line of plumbing fixtures for Schools, Railroads and Industrial Plants.
- Crane Company, 836 S. Michigan Avenue, Chicago, Ill.**
Crane Products in World Wide Use. Catalog. $5 \times 9\frac{1}{2}$ in. 24 pp. Illustrated.
- Plumbing Suggestions for Home Builders. Catalog. 3×6 in. 80 pp. Illustrated.
- Plumbing Suggestions for Industrial Plants. Catalog. $4 \times 6\frac{1}{2}$ in. 43 pp. Illustrated.
- Douglas Co., The John, Cincinnati, Ohio.**
Catalog "C," $10\frac{1}{2} \times 8$ in. 200 pp. Illustrated. Illustrates and describes the Douglas complete line of China Sanitary plumbing fixture.
- Booklet. Douglas Suggests for your Home. $6 \times 3\frac{1}{2}$ in. 39 pp. Illustrated.
- Eljer Company, Fort City, Pa.**
Complete Catalog. $3\frac{3}{4} \times 6\frac{1}{4}$ in. 104 pp. Illustrated. Describes fully the complete Eljer line of standardized vitreous china plumbing fixtures, with diagrams, weights and measurements. Standardized Sixteen. Circular. $3\frac{3}{4} \times 6\frac{1}{4}$ in. 18 pp. Illustrated.
- Kohler Co., Kohler, Wis.**
Catalog F. $7\frac{1}{2} \times 10\frac{1}{4}$ in. 216 pp. Illustrates and describes the complete line of Kohler trade-marked plumbing ware.
- Roughing-In Measurement Binder. 5×8 in., containing loose leaf sheets on all staple fixtures.
- Maddock's Sons Company, Thomas, Trenton, N. J.**
Catalog K. $10\frac{1}{4} \times 7\frac{3}{4}$ in. 242 pp. Illustrated. Complete data on vitreous china plumbing fixtures with brief history of Sanitary Pottery.
- Speakman Company, Wilmington, Del.**
Speakman Showers and Fixtures. Catalog. $4\frac{1}{2} \times 7\frac{1}{2}$ in. 250 pp. Illustrated. Catalog of Modern Showers and Brass Plumbing Fixtures, with drawings showing layouts, measurements, etc.
- Toned Up in Ten Minutes. Booklet. $7\frac{1}{2} \times 10\frac{1}{4}$ in. 16 pp. Illustrated. Modern Showers and Washups for Industrial Plants, showing the sanitary method of washing in running water.

PUMPS

- Chicago Pump Company, 2300 Wolfram Street, Chicago, Ill.**
The Correct Pump to Use. Portfolio containing handy data. Individual bulletins, $8\frac{1}{2} \times 11$ in., on bilge, sewage, condensation, circulating, house, boiler feed and fire pumps.
- Goulds Mfg. Co., The, Seneca Falls, N. Y.**
Set of Twenty Bulletins, $7\frac{1}{2} \times 10\frac{1}{4}$ in. 12 to 32 pp. each. Illustrated. Covers complete line of power and centrifugal pumps for all services.
- Kewanee Private Utilities Co., 442 Franklin St., Kewanee, Ill.**
Bulletin E. $7\frac{1}{4} \times 10\frac{1}{4}$ in. 32 pp. Illustrated. Catalog. Complete descriptions, with all necessary data, on Standard Service Pumps, Indian Brand Pneumatic Tanks, and Complete Water Systems, as installed by Kewanee Private Utilities Co.

RAMPS

- Ramp Buildings Corporation, 115 Broad St., New York, N. Y.**
The d'Humy Motoramp System of Building Design. Booklet. $8\frac{1}{2} \times 11$ in. 20 pp. Illustrated. Describes the d'Humy system of ramp construction for garages, service buildings, factories, warehouses, etc., where it is desirable to drive motor vehicles or industrial tractors under their own power from floor to floor.
- Storage Efficiency of Multi-Floor Garages. Leaflet. $8\frac{1}{2} \times 11$ in. 4 pp. Illustrated. A brief discussion of comparative storage efficiencies of elevator garages, ordinary ramp garages, and d'Humy Motoramp garages.
- Visibility. Pamphlet. $8\frac{1}{2} \times 11$ in. 2 pp. Illustrated. Discussion of visibility feature of d'Humy Motoramp System with reference to illustration of one particular installation.
- Series of Informal Bulletins on Garage Design. Sent upon request.

REINFORCED CONCRETE—See also Construction, Concrete

- The General Fireproofing Company, Youngstown, Ohio.**
Self-Sentering Handbook. $8\frac{1}{2} \times 11$ in. 36 pp. Illustrated. Methods and specifications on reinforced concrete floors, roofs and walls with a combined form and reinforced material.
- Truscon Steel Company, 250 W. Lafayette Blvd., Detroit, Mich.**
Shearing Stresses in Reinforced Concrete Beams. Booklet. $8\frac{1}{2} \times 11$ in. 12 pp.
- North Western Expanded Metal Company, Chicago, Ill.**
Designing Data. Book. 6×9 in. 56 pp. Illustrated. Covers the use of Econo Expanded Metal for various types of reinforced concrete construction.

ROOFING

- American Brass Company, Waterbury, Conn.**
Service Sheets 43-1 and 43-2, standard specifications and methods of laying copper roofings, flashings, hips, valleys, decks, gutters and leaders.
- American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.**
Better Buildings. Catalog. $8\frac{1}{2} \times 11$ in. 32 pp. Describes Corrugated and Formed Sheet Steel Roofing and Siding Products, black, painted and galvanized, with directions for application of various patterns of Sheet Steel Roofing in various types of construction.
- Copper—Its Effect Upon Steel for Roofing Tin. Catalog. $8\frac{1}{2} \times 11$ in. 28 pp. Illustrated. Describes the merits of high-grade roofing tin plates and the advantages of the copper-steel alloy.
- The Testimony of a Decade. Booklet. $8\frac{1}{2} \times 11$ in. 16 pp., with Graphic Chart and illustration showing losses to various Iron and Steel Sheets for roofing, from atmospheric corrosion.
- Philip Carey Co., Lockland, Cincinnati, Ohio.**
Architects' Specifications for Carey Built-up Roofing. Booklet. $8 \times 10\frac{1}{4}$ in. 24 pp. Illustrated. Complete data to aid in specifying the different types of built-up roofing to suit the kind of roof construction to be covered.
- Carey Built-up Roofing for Modern School Buildings. Booklet. $8 \times 10\frac{1}{4}$ in. 32 pp. Illustrated. A study of school buildings of a number of different kinds and the roofing materials adapted for each.
- Federal Cement Tile Co., 110 So. Dearborn St., Chicago, Ill.**
The Indestructible Roof. Booklet. 10×13 in. 32 pp. Illustrated. Illustrates and describes the installation of permanent concrete interlocking tile, tile with glass insets, flat tile and channel tile, on all types of industrial plants and other buildings with flat and pitched surfaces.
- Standards. Booklet. $8\frac{1}{2} \times 11$ in. 40 pp. Illustrated with full-page drawings. Gives full details of all forms of roof construction of steel structure, ridge and gutter construction, purlin arrangement, spacing, etc., for standard roofs.
- Johns-Manville, Inc., Madison Ave. & 41st St., New York, N. Y.**
Johns-Manville Building Materials. Book. $8\frac{1}{2} \times 11$ in. 100 pp. Illustrated. A comprehensive catalog of various types of roofing for all forms of construction. Details of wall, floor and ceiling insulation; asbestos wood for fireproof construction; waterproofing, etc.
- Johns-Manville Asbestos Shingles. Booklet. $8\frac{1}{2} \times 11$ in. 24 pp. Illustrated. This booklet is profusely illustrated in colors, showing some very artistic blends of asbestos shingles with various types of architecture. Contains many valuable suggestions for the architect.
- Ludowici-Celadon Company, 104 So. Michigan Ave., Chicago, Ill.**
"Ancient" Tapered Mission Tiles. Leaflet. $8\frac{1}{2} \times 11$ in. 4 pp. Illustrated. For architects who desire something out of the ordinary, this leaflet has been prepared. Describes briefly the "Ancient" Tapered Mission Tiles, hand-made, with full corners and designed to be applied with irregular exposures.
- Milwaukee Corrugating Co., Milwaukee, Wis.**
The Milcor Architectural Sheet Metal Guide. Booklet. $8\frac{1}{2} \times 11$ in. 64 pp. Illustrated. Gives valuable technical sheet metal data.
- New Jersey Zinc Company, 160 Front St., New York, N. Y.**
Standing Seam Horse Head Zinc Roofing. Booklet outlining the adaptability of this roofing for many types of buildings. Illustrated with sketches showing how roofing is applied. Also describes lasting qualities, appearance, etc.
- Once in a Lifetime. Booklet describing conductors, gutters and standing seam roofing made from Horse Head Zinc. Contains information on their economy and durability. Illustrated.
- Richardson Company, The, Lockland, Ohio.**
Roofs of Distinction. Booklet. $5 \times 6\frac{1}{4}$ in. 22 pp. Illustrated in 4 colors and black and white.
- Gives process of roofing manufacture. Has color charts showing four shingles of different colors blended in same roof. Lists and describes Richardson Products.
- Roofing on the Farm. Booklet. $5 \times 6\frac{1}{4}$ in. 22 pp. Illustrated in 4 colors and black and white.
- A solution to farm roofing problems.
- Viskalt Roof Specifications. Booklet. 7×12 in. 10 pp. Illustrated. Specifications for applying Viskalt Membrane built on roofs.



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Jenkins, salesman at A. De Pinna, recognized his signal and stepped to the city phone. "Hello, Mr. Starr—Oh yes—you don't want a cuff? All right, hold the wire—I'll fix that in a minute." Setting down the receiver of the city phone, Jenkins dialed two figures on a handy P-A-X phone and spoke directly to the alteration department, "Never mind about the cuff on 7444A—" Then turning to the city phone—"All right, Mr. Starr—No trouble—Tomorrow sure. Goodbye."

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SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—Continued from page 110

ROOFING—Continued

- A Specific Way to Outwit the Weather. Booklet. 10 x 12 in. 4 pp. Illustrated.
Treatise on recoating old roofs.
- Ruberoid Co., The** (formerly the Standard Paint Co.), 95 Madison Avenue, New York, N. Y.
Instructions for Laying Built-up Roofs. Booklet. 8½ x 11 in. Illustrated.
- Ruberoid Strip-Shingle. Booklet. 3½ x 6¼ in. 16 pp. Illustrated in color.
- United Alloy Steel Corporation**, Canton, Ohio.
Better Sheet Metal. 8½ x 11 in. 128 pp. and cover. Illustrated. Shows the many uses of Toncan Metal with many pictures of buildings, names of architects, etc., also tables of weights and other useful specification data.
- U. S. Gypsum Co.**, Chicago.
Pyrobar Roof Construction. Booklet. 8 x 11 in. 48 pp. Illustrated. Gives valuable data on the use of tile in roof construction.
- Sheetrock Pyrofill Roof Construction. Folder. 8½ x 11 in. Illustrated. Covers use of roof surfacing which is poured in place.
- Weatherbest Stained Shingle Co., Inc.**, North Tonawanda, N. Y.
The Construction of Weatherbest Stained Shingles. Booklet. 8 x 11 in. 16 pp. Illustrated. A well written, carefully prepared book giving in detail the proper construction for securing the Thatch Effect roof by the use of WEATHERBEST Stained Shingles. Contains full-page reproductions of WEATHERBEST homes and drawings showing detail of roof construction. Various Pamphlets. Illustrated. Each pamphlet exemplifies some specific quality of WEATHERBEST Stained Shingles used for roofs and sidewalls.

RUGS, IMPORTED

- Kent-Costikyan Trading Company, Inc.**, 484 Fifth Ave., New York, N. Y.
Rugs. Catalogue. 9½ x 6½. 56 pp. Illustrated. Illustrates and describes an unusual collection of Oriental and Occidental rugs with stock list.

SASH CHAIN

- American Chain Company, Inc.**, Bridgeport, Conn.
American Sash Chain. Booklet. 6 x 9. 16 pp. Illustrated. Describes and illustrates American Sash Chain and Sash Fixtures.
- Smith & Egge Mfg. Co., The**, Bridgeport, Conn.
Chain Catalog. 6 x 8½ in. 24 pp. Illustrated. Covers complete line of chains.

SASH CORD

- Samson Cordage Works**, Boston, Mass.
Catalog. 3½ x 6¼ in. 24 pp. Illustrated. Covers complete line of rope and cord.

SCREENS

- Athey Company**, 6015 West 65th St., Chicago, Ill.
The Athey Perennial Window Shade. An accordion pleated window shade, made from translucent Herringbone woven Coutil cloth, which raises from the bottom and lowers from the top. It eliminates awnings, affords ventilation, can be dry-cleaned and will wear indefinitely.
- The Higgin Manufacturing Co.**, Newport, Ky.
Your Home Screened the Higgin Way. Booklet. 8½ x 11½ in. 13 pp. Illustrated in colors. Complete description of Higgin Screens, designed to meet every need.
- New Jersey Wire Cloth Co.**, Trenton, N. J.
A matter of Health and Comfort. Booklet. 5 x 7¾ in. 16 pp. Illustrated. Discusses quality in wire insect screen cloth.

SEWAGE DISPOSAL

- Kewanee Private Utilities**, 442 Franklin St., Kewanee, Ill.
Specification Sheets. 7¼ x 10¼ in. 40 pp. Illustrated. Detailed drawings and specifications covering water supply and sewage disposal systems.

SHEATHING

- Bishopric Manufacturing Co.**, 103 Este Ave., Cincinnati, Ohio.
For All Time and Clime. Booklet. 6 x 9 in. 48 pp. Illustrated. Describing the use of Bishopric stucco base and Bishopric plaster base.

STAINS—See Paints, Varnishes, Wood Finishes

STEEL COMPARTMENTS

- Henry Weis Mfg. Co.**, Atchison, Kan.
Catalog No. 11, 1923 Edition. 8½ x 11 in. 32 pp. Illustrated. Shows toilet, shower and dressing-room compartment, and Hospital Cubical installations in all types of buildings; describes "WEISTEEL" compartments in detail; gives complete specifications and suggested specifications for architects' use; includes blueprints of suggested layouts, lists of standard sizes and units.

STONE, BUILDING

- Indiana Limestone Quarrymen's Association**, Box 766, Bedford, Ind.
Volume 3, Series A-3. Standard Specifications for Cut Indiana Limestone work. 8½ x 11 in. 56 pp. Containing specifications and supplementary data relating to the best methods of specifying and using this stone for all building purposes.
- Vol. 1. Series B. Indiana Limestone Library. 6 x 9 in. 36 pp. Illustrated. Giving general information regarding Indiana Limestone, its physical characteristics, etc.
- Vol. 4. Series B. Booklet. New Edition. 8½ x 11 in. 64 pp. Illustrated. Indiana Limestone as used in Banks.
- Volume 5. Series B. Indiana Limestone Library. Portfolio. 11¼ x 8¼ in. Illustrated. Describes and illustrates the use of stone for small houses with floor plans of each.

STORE FRONTS

- Brasco Manufacturing Co.**, 5025-35 South Wabash Avenue, Chicago, Ill.
Portfolio. 8½ x 11 in. 32 pp. Illustrated. Selected examples of Brasco Copper Store Fronts suitable for different businesses and varying conditions of locations.
- Catalogue 28. 8½ x 10¼ in. 20 pp. Illustrated with plates. Details of Brasco Copper Store front construction. Also show-cases, ventilator sashes.
- Detail Sheets. Set of five sheets giving details and suggestions for store front designing enclosed in envelope convenient for filing.

STORE FRONTS—Continued

- Kawneer Co., The**, Niles, Mich.
A Collection of Successful Designs. Catalog. 9¼ x 6¼ in. 64 pp. Illustrated. Showing by use of drawings and photographs many types of Kawneer Solid Copper Store Fronts.
- Zouri Drawn Metals Company**, Chicago Heights, Ill.
Zouri Safety Key-Set Store Front Construction. Catalogue. 8½ x 10½ in. 60 pp. Illustrated. Complete information with detailed sheets and installation instructions convenient for architects' files.
- International Store Front Construction. Catalogue. 8½ x 10 in. 70 pp. Illustrated. Complete information with detailed sheets and installation instructions convenient for architects' files.

STUCCO

- Bishopric Manufacturing Co.**, 103 Este Ave., Cincinnati, Ohio.
For All Time and Clime. Booklet. 6 x 9 in. 48 pp. Illustrated. Describing the use of Bishopric stucco base and Bishopric plaster base.

STUCCO BASES

- Bishopric Manufacturing Co.**, 103 Este Ave., Cincinnati, Ohio.
Specifications and Working Details. Booklet. 7¼ x 10¼ in. Illustrated. Contains plainly written instructions for the use of stucco, stucco base, plaster base and insulation base.

STUCCO, MAGNESITE

- American Magnestone Corporation**, Springfield, Ill.
Catalog. 13 pp. Describes the quality, beauty and strength of Magnestone.
- Muller & Co., Franklyn R.**, Waukegan, Ill.
Everlastic Magnesite Stucco. Booklet. 8½ x 11 in.

TERRA COTTA

- National Terra Cotta Society**, 19 West 44th St., New York, N. Y.
Standard Specification for the Manufacturer. 8½ x 11 in. 12 pp. Furnishing and Setting of Terra Cotta, consisting of complete detail Specification. Glossary of Terms Relating to Terra Cotta and Short Form Specification for incorporating in Architect's Specifications.
- Color in Architecture. Illustrated brochure 8½ in. containing a treatise upon the basic principles of color in architectural design, illustrating early European and modern American examples.
- Present Day Schools. 8½ x 11 in. 32 pp. Illustrating 42 examples of school architecture with article upon school building design by James O. Betelle, A. I. A.
- Better Banks. 8½ x 11 in. 32 pp. Illustrating many banking buildings in terra cotta with an article on its use in bank design by Alfred C. Bossom, Architect.

- Northwestern Terra Cotta Co., The**, 2525 Clybourn Ave., Chicago, Ill.
Booklet. 8½ x 11 in. 77 pp. Illustrated. Showing in a concise way the usefulness of terra cotta.

TERRAZZO

- Galassi Company**, 153 East 38th Street, New York, N. Y.
Suggesting a Standard Specification for Terrazzo Work Booklet. Specifications for the use of terrazzo.

THERMOSTATS—See Heating Equipment

TILE, FLOOR AND WALL

- Associated Tile Manufacturers, The**, Beaver Falls, Pa.
Basic Information Booklet. 7½ x 10¼ in. 24 pp. Illustrated. Ask for Booklet K-200.
A publication issued for architects, engineers and educators to acquaint them with methods of grading, derivation of sizes and shapes, variety of colors, kind of finishes, nomenclature and ingredients and processes insofar as they lead to a better understanding of the product and its uses.
- Basic Specifications and Related Documents. Booklet. 7½ x 10¼ in. 38 pp. Ask for Booklet K-300.
- The Basic Specification proper gives in detail the procedure to be followed with respect to any kind of tile installation in connection with practically every type of construction. The Related Documents or work sheets are designed to call attention to optional application methods and materials.
- Swimming Pools. Booklet. 8½ x 11 in. 32 pp. Illustrated. Issued for the use of architects and engineers as a handbook on swimming pools and their construction.
- Bringing the Crowds to Your Market. Booklet. 8½ x 11 in. 16 pp. Illustrated in color. Shows use of tile for the modern sanitary market.

TILE, HOLLOW

- National Fire Proofing Co.**, 250 Federal St., Pittsburgh, Pa.
Standard Wall Construction Bulletin 174. 8½ x 11 in. 32 pp. Illustrated. A treatise on the subject of hollow tile wall construction.
- Natco on the Farm. 8½ x 11 in. 38 pp. Illustrated. A treatise on the subject of fire safe and permanent farm building construction.
- Natco Homes and Garages. Booklet. 7 x 10 in. 32 pp. Illustrated. Showing the use of Natco Hollow Tile for private residences.

VACUUM CLEANING APPARATUS

- The Spencer Turbine Company**, Hartford, Conn.
Vacuum Cleaning Apparatus for all purposes. Booklet. 32 pp. Illustrated. Complete information on product, showing prominent buildings equipped with this system.

VALVES

- Crane Co.**, 836 S. Michigan Ave., Chicago, Ill.
No. 50 Steam Pocket Catalog. 4 x 6¼ in. 775 pp. Illustrated. Describes the complete line of the Crane Co.
- Gorton & Lidgerwood Co.**, 96 Liberty St., New York, N. Y.
Gorton Quarter-Turn Packing-Lock Valves. Booklet. 4¼ x 7¼ in. 32 pp. Illustrated. Describing a new type of valve for all systems of steam, hot water and vacuum heating.
- Illinois Engineering Co.**, Racine Ave., at 21st St., Chicago, Ill.
Catalogue. 8½ x 11 in. 88 pp. Illustrated.

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HERE is a college building without aspiring towers, nor verdant campus lawns.

The building is designed to give the utmost service for the money invested. It is permanent. Good materials make it so. The investment has been concentrated on practical purposes.

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SELECTED LIST OF MANUFACTURERS' PUBLICATIONS — Continued from page 112

VALVES—Continued

Jenkins Bros., 80 White Street, New York.

The Valve Behind a Good Heating System. Booklet $4\frac{1}{2} \times 7\frac{1}{4}$ in. 16 pp. Color plates. Description of Jenkins Radiator Valves for steam and hot water, and brass valves used as boiler connections.

Jenkins Valves for Plumbing Service. Booklet. $4\frac{1}{2} \times 7\frac{1}{4}$ in. 16 pp. Illustrated. Description of Jenkins Brass Globe, Angle Check and Gate Valves commonly used in home plumbing, and Iron Body Valves used for larger plumbing installations.

VARNISH—See Paints, Stains, Varnishes

VENETIAN BLINDS

Burlington Venetian Blind Co., Burlington, Vt.

Venetian Blinds. Booklet. $4\frac{1}{2} \times 7\frac{1}{2}$ in. 32 pp. Illustrated. Describes the "Burlington" Venetian blinds, method of operation, advantages of installation to obtain perfect control of light in the room.

VENTILATION

Globe Ventilator Company, 205 River Street, Troy, N. Y.

Globe Ventilators Catalog. 6×9 in. 32 pp. Illustrated profusely. Catalog gives complete data on "Globe" ventilators as to sizes, dimensions, gauges of material and table of capacities. It illustrates many different types of buildings on which "Globe" ventilators are in successful service, showing their adaptability to meet varying requirements.

Van Zile Ventilating Corporation, 280 Madison Avenue, New York, N. Y.

The Ventadoor Booklet. $6\frac{1}{2} \times 3\frac{1}{2}$ in. 16 pp. Illustrated. Describes and illustrates the use of the Ventadoor for Hotels, Clubs, Offices, etc.

WALL PAPER

W. H. S. Lloyd Company, 105-7 West 40th St., New York City.

Architects' Book. 301 pp. $8 \times 5\frac{1}{4}$ in. Illustrated. Architects find this book of great service in selecting grades of wall paper. While it shows but a very limited selection of Lloyd Papers, it gives a fair idea of their quality, patterns and colors.

WATERPROOFING

Carey Company, The Philip, Lockland, Cincinnati, Ohio.

Waterproofing Specification Book. $8\frac{1}{2} \times 11$ in. 52 pp.

The General Fireproofing Company, Youngstown, Ohio.

Waterproofing Handbook. Booklet. $8\frac{1}{2} \times 11$ in. 72 pp. Illustrated. Thoroughly covers subject of waterproofing concrete, wood and steel preservatives, dustproofing and hardening concrete floors, and accelerating the setting of concrete. Free distribution.

Ruberoid Co., The, 95 Madison Ave., New York.

Impervite. Circular. $8\frac{1}{2} \times 11$ in. 4 pp. Illustrated. An integral water-proofing compound for concrete, stucco, cement, mortar, etc.

Sandusky Cement Co., Dept. F, Cleveland, Ohio.

Medusa Waterproofing. Booklet. $6\frac{1}{2} \times 9$ in. 38 pp. Illustrated.

Sonneborn Sons, Inc., 116 Fifth Ave., New York, N. Y.

Pamphlet. $3\frac{1}{4} \times 8\frac{1}{4}$ in. 8 pp. Explanation of waterproofing principles. Specifications for waterproofing walls, floors, swimming pools and treatment of concrete, stucco and mortar.

WATER PURIFIERS

Wallace & Tiernan Company, Newark, N. J.

Protecting N. Y. Water Supply. Booklet. 10×7 in. 24 pp. Illustrated. Describes the chlorinating equipment used for sterilizing N. Y. City water supply; also equipment suitable for sterilizing water supplies of municipalities, industrial plants, private residences, etc.

WATER SOFTENERS

Permutit Company, The, 440 Fourth Ave., New York, N. Y.

Permutit-Water softened to No (Zero) Hardness. Booklet. $8\frac{1}{2} \times 11$ in. 32 pp. Describing the original Zeolite process of softening water to zero hardness. An essential for homes, hotels, apartment houses, swimming pools, laundries, textile mills, paper mills, ice plants, etc., in hard water districts.

WEATHER STRIPS

Monarch Metal Products Co., 5000 Penrose St., St. Louis, Mo.

Monarch Metal Weatherstrips, A. I. A. Class 19 e 14. Manual. $7\frac{1}{2} \times 10\frac{1}{4}$ in. 48 pp. Illustrated. Designed for architects and specification writers, showing details of windows, doors and other openings and the proper manner of installing Monarch strips. It also shows various strips made by this company. Fourteen pages are devoted to window leakage and radiation calculations.

The Higgin Manufacturing Co., Newport, Ky.

Higgin All-Metal Weather Strips. Booklet. 6×9 in. 21 pp. Illustrated in colors. Describes various types of Higgin Weather Strips for sealing windows and doors against cold and dust.

WINDOW HARDWARE, CASEMENT

Hoffman Mfg. Co., Andrew, 900 Steger Bldg., Chicago, Ill.

Hoffman Casement Fixtures. Architects' Portfolio. $8\frac{1}{2} \times 11$ in. 30 pp. Loose-leaf. Scale details for mill-work, installation, etc., in new and old work.

International Casement Company, Jamestown, N. Y.

International Casements. Catalog. $8\frac{1}{2} \times 11$ in. 224 pp. Illustrated. Valuable book, containing photographs and measured drawings of all types of buildings, showing casement windows.

Monarch Metal Products Co., 5000 Penrose St., St. Louis, Mo.

Monarch Casement Hardware. A. I. A. Class 27 c. 2. Manual. $7\frac{1}{2} \times 10\frac{1}{4}$ in. 20 pp. Shows details of casement windows and manner of installing Monarch casement hardware, for both outswinging and inswinging types. Monarch control locks are designed for installation under sill and to operate outswinging casements without removing screens.

Richards-Wilcox Mfg. Co., Aurora, Ill.

Casement Window Hardware. Booklet. 24 pp. $8\frac{1}{2} \times 11$ in. Illustrated. Shows typical installations, detail drawings, construction details, blue-prints if desired. Describes Air-way Multifold Window hardware.

WINDOWS, CASEMENT

Crittall Casement Window Co., 10951 Hearn Ave., Detroit, Mich.

Catalog No. 22. 9×12 in. 76 pp. Illustrated. Photographs of actual work accompanied by scale details for casements and composite steel windows for banks, office buildings, hospitals and residences.

Hoffman Mfg. Co., Andrew, 900 Steger Bldg., Chicago, Ill.

Hoffman Casements. Architects' Portfolio. $8\frac{1}{2} \times 11$ in. 30 pp. Loose-leaf. Scale details for mill-work, installation, etc., in new and old work.

Hope & Sons, Henry, 103 Park Ave., New York, N. Y.

Catalog. $12\frac{1}{4} \times 18\frac{1}{2}$ in. 30 pp. Illustrated. Full size details of outward and inward opening casements.

WINDOWS, STEEL AND BRONZE

Detroit Steel Products Company, Detroit, Mich.

Fenestra Basement Windows. Booklet. $3\frac{1}{4} \times 6\frac{1}{4}$ in. 16 pp. Illustrated. Describes steel basement windows, their advantages, details and specifications for installation.

Fenestra Reversible Ventilator Windows. Booklet. $8\frac{1}{2} \times 11$ in. 20 pp. Illustrated. Describes the details of this new model window, as well as the variety it offers for attractive architectural design.

Fenestra Counter-Balanced Windows. Catalog. $8\frac{1}{2} \times 11$ in. 111 pp. Illustrated. Details and specifications are thoroughly covered in the Fenestra General Catalog.

Fenestra Industrial Window Walls. Catalog. $8\frac{1}{2} \times 11$ in. 111 pp. Illustrated. Details and specifications, with photographic illustrations, are thoroughly covered in the Fenestra General Catalog.

International Casement Company, Inc., Jamestown, N. Y.

Catalogue. $8\frac{1}{2} \times 11$ in. 223 pp. Complete in its description of International Windows, detailed drawings, illustrations and specifications.

Booklet. 8×5 in. Prepared for the home builder and to assist the architect in presenting information on casement windows.

Folders. $8\frac{1}{2} \times 11$ in. Detailed drawings and specifications on Austral windows for banks, industrial buildings and office buildings.

The Kawneer Company, Niles, Mich.

Kawneer Simplex Windows. Catalog. $8\frac{1}{2} \times 10\frac{1}{4}$ in. 16 pp. Illustrated. Complete information, with measured details, of Kawneer Simplex Weightless Reversible Window Fixtures, made of solid bronze. Shows installations in residences and buildings of all sorts.

Detail Sheets and Installation Instructions. Valuable for architects and builders.

Truscon Steel Company, 250 W. Lafayette Blvd., Detroit, Mich.

Truscon Steel Windows. Catalog. $8\frac{1}{2} \times 11$ in. 80 pp. Illustrated. Contains complete data on all types of Truscon Steel Windows.

WOOD—See also Millwork

American Walnut Mfrs. Association, 618 So. Michigan Blvd., Chicago, Ill.

American Walnut. Booklet. 7×9 in. 45 pp. Illustrated. A very useful and interesting little book on the use of Walnut in Fine Furniture with illustrations of pieces by the most notable furniture makers from the time of the Renaissance down to the present.

Real American Walnut Furniture. Folder. $8\frac{1}{2} \times 11$ in. 4 pp. Illustrated. Tells how to identify the genuine and avoid the substitute in buying "Walnut" furniture.

California White and Sugar Pine Mfrs. Assn., San Francisco, Cal.

Information Sheet No. 1, California White Pine; Information Sheet No. 2, California Sugar Pine. Illustrated booklets $8 \times 10\frac{1}{4}$ in. First of a series of Information Sheets on these woods and their uses for construction and finish.

Curtis Companies Service Bureau, Clinton, Iowa.

Better Built Homes, Vols. XV-XVIII, incl. Booklet. 9×12 in. 40 pp. Illustrated. Designs for houses of five to eight rooms, respectively, in several authentic types, by Trowbridge & Ackerman, architects, for the Curtis Companies.

Long-Bell Lumber Co., Kansas City, Mo.

The Perfect Floor. Booklet $5\frac{1}{4} \times 7\frac{1}{4}$ in. 16 pp. Illustrated. Valuable for the data given on the use of wood for floors.

Saving Home Construction Costs. Booklet $4\frac{1}{4} \times 7\frac{1}{4}$ in. 24 pp.

Discusses economy and value in domestic building.

Experiences in Home Building. Booklet 6×9 in. 16 pp. Records the testimony of a number of builders and contractors as to the value of certain materials.

The Post Everlasting. Booklet 8×11 in. 32 pp. Illustrated.

Describes the production of posts and their use in various ways.

Mahogany Association, Inc., 1133 Broadway, New York.

Booklet. 6×8 in. "Stately Mahogany" giving a general description of mahogany, where found and its uses.

Booklet. 6×8 in. "Historic Mahogany." A monograph of period mahogany fully illustrated with pen drawings.

Booklet. 6×8 in. Architectural Woodwork of Mahogany. 32 pp. fully illustrated with photographs of mahogany panelings and containing much information of interest to architects.

Matthews Bros. Mfg. Company, Milwaukee, Wis.

Architectural Woodwork. Catalog. 9×12 in. 34 pp. Illustrated. This is the only catalog issued, and contains views showing both exteriors and interiors of banks, private residences, and office buildings in which this Company's woodwork has been installed.

Pacific Lumber Company, 332 So. Michigan Ave., Chicago, Ill.

California Redwood. Booklet. 9×12 in. 36 pp. Illustrated. Describes in a general way the production, manufacture and various uses of California Redwood.

Redwood Construction Digest. Booklet. $8\frac{1}{2} \times 11$ in. 16 pp. Illustrated. Redwood and Its Uses in the Construction Field. Contains specifications and other information of interest to architects and builders generally.

WOOD FINISHES—See Paints, Varnishes, Stains



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California White Pine and California Sugar Pine are woods endowed by Nature with physical characteristics that make them unusually well suited to paint treatment.

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☞ California Pines are light in color. They do not "oppose" the paint. For this reason, any color scheme may be successfully applied with an economy of time and materials—especially the prevailing light tones for interior and exterior painting.



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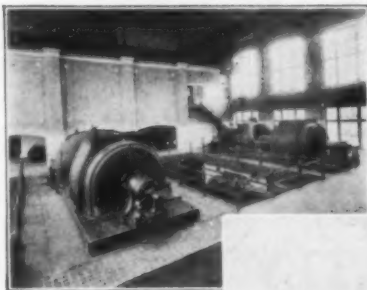


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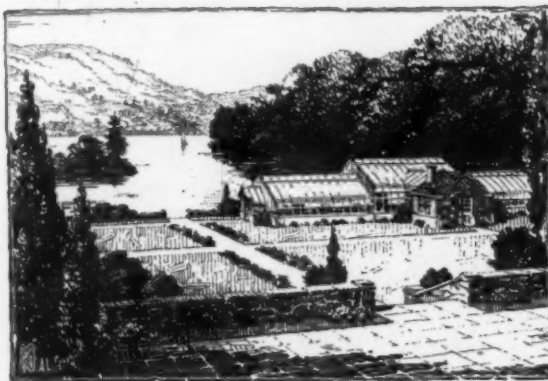
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MAGNIFICENT Hudson View Gardens, Dr. Charles V. Paterno's new 354-apartment achievement, is 100 per cent Kernerator equipped! Naturally, the time-proven economy and convenience of the Kernerator exactly fitted Dr. Paterno's intention of creating a truly modern apartment community. Three hundred and fifty-four handy hopper doors—one in each kitchen—mean instant, right-at-hand garbage and waste disposal to every owner-tenant. What an attraction to the buyer—and what a tremendous saving, too! No ill-smelling garbage pails at kitchen doors. No double or treble handling of garbage within the building before it is finally disposed of. No waiting for the tardy call of the janitor. No replacement of garbage pails either, for there are none. Just a neat, metal door into which every bit of household waste is dropped as fast as it accumulates—and then forgotten!

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The Kernerator, as the cut-away view shows, consists of a brick combustion chamber, built in at the base of the chimney in the basement, and connecting with hopper doors on floors above. It handles *all* garbage, waste, tin cans, bottles, broken glass, crockery, papers and magazines, razor blades, sweepings—in fact, trash and refuse of every description. A patented, scientifically designed by-pass feature quickly air-dries the accumulation, so it lights easily and is readily burned. Non-combustibles, (metallic objects, etc.) are flame-sterilized and removed with the ashes.

For more detailed information, consult
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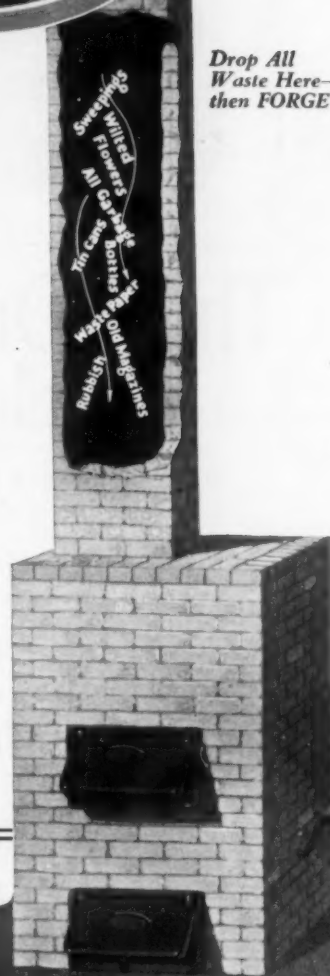
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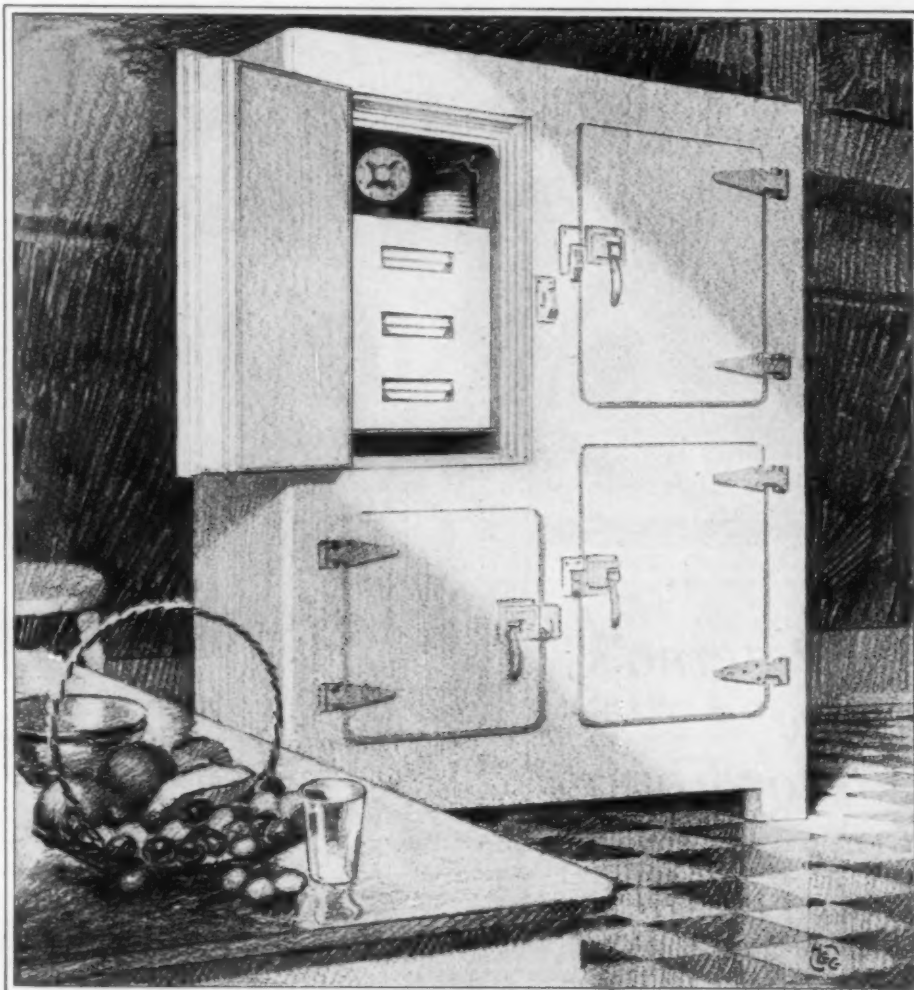
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Kelvinator

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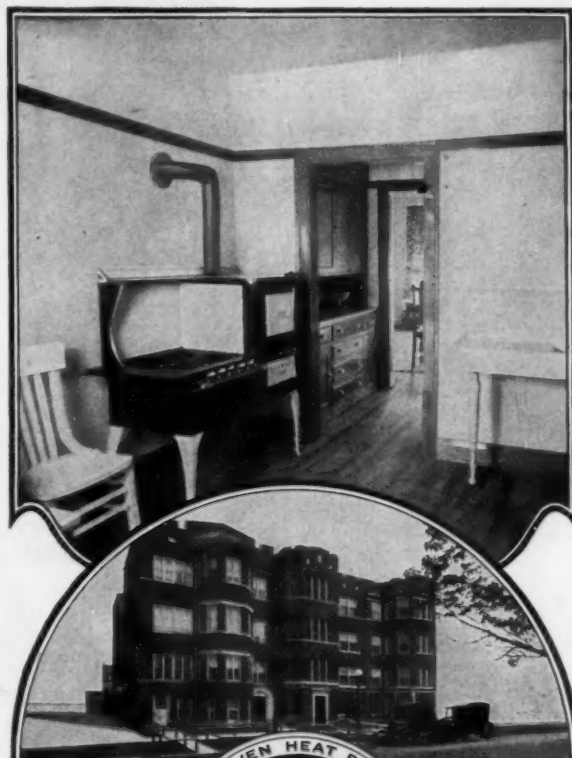
To the Men Who Plan and Build Apartment Buildings:

DO you know that a gas range equipped with the Lorain Oven Heat Regulator represents the highest achievement yet reached in the development of an appliance for the perfect cooking of foods?

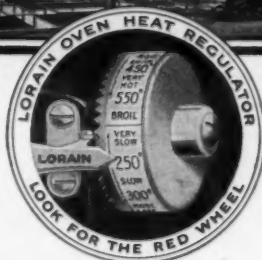
Do you know that any kitchen Today that has a gas range without a Lorain Self-Regulating Oven cannot be said to have the most modern cookery equipment?

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Representative kitchen of these apartments, showing type of Clark Jewel Gas Range with Lorain Oven Heat Regulator. This particular kitchen is located at 6741 Paxton Avenue; Wm. H. Lautz, Architect.

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THE ULTIMATE In Architectural Illumination



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¶ These new luminaires cover a wide range of lighting requirements—for banks, churches, hotels, schools, offices, stores and other types of buildings.

¶ Two of the many designs are here illustrated.

¶ A portfolio of sketches showing some 20 other fixtures is now being prepared for architects' libraries. The edition is limited; but if you will write us on your business letterhead we shall send you a copy, without obligation, as soon as ready.



HOLOPHANE GLASS COMPANY

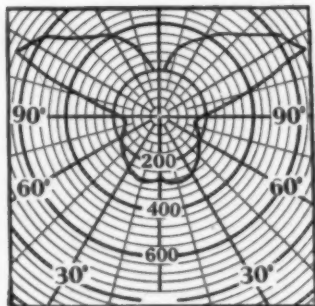
Canadian Pacific Building, New York City

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Paris

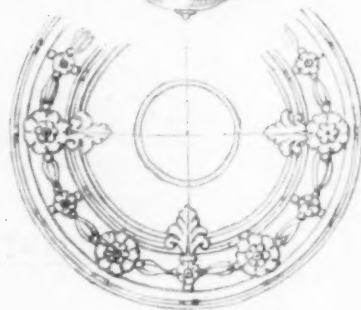
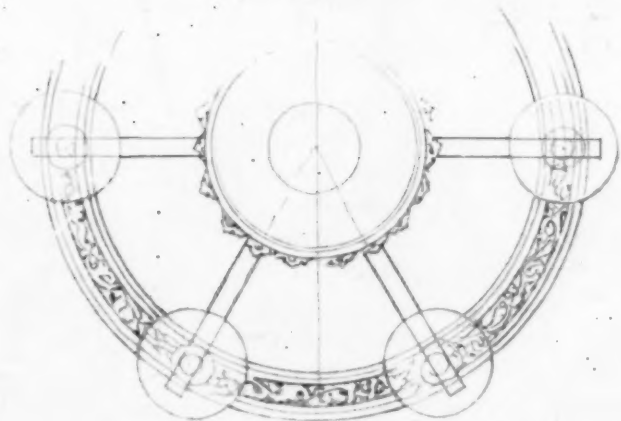
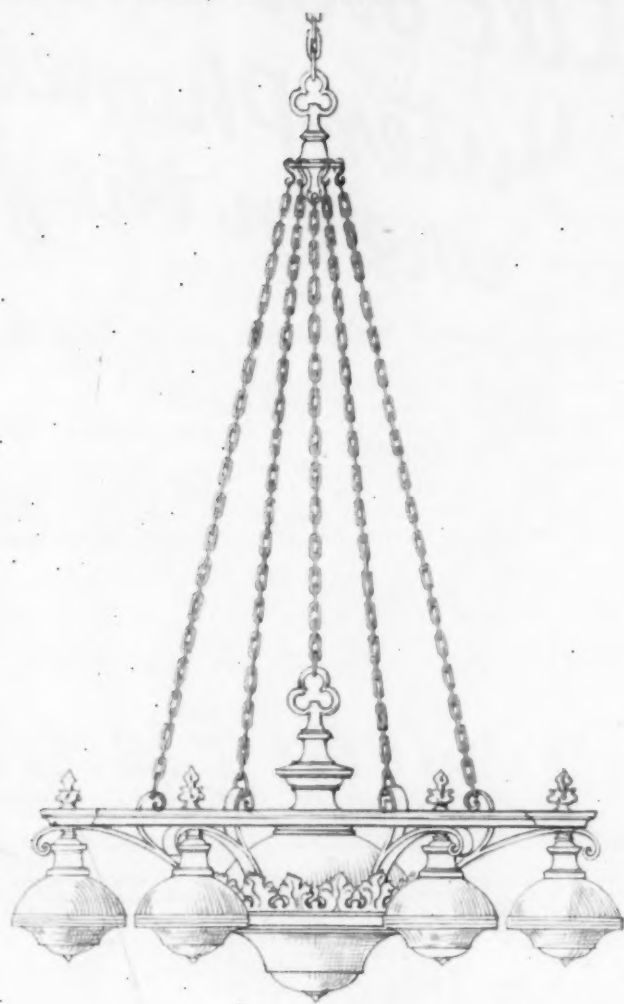
Toronto

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THE STANDARD R-r (Holophane Reflector-Refractor)

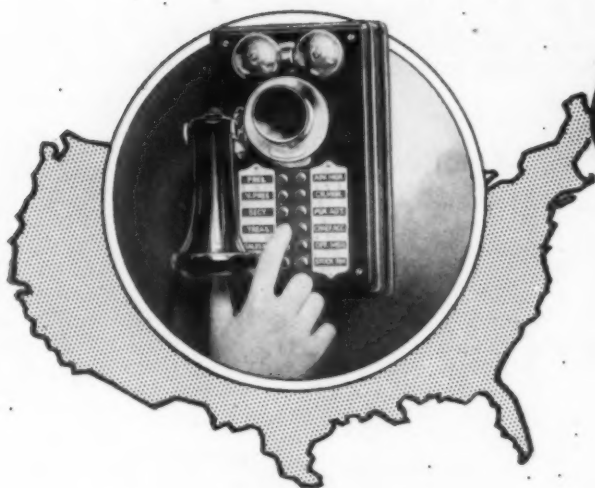
This is one of the many Holophane units developed in scientific prismatic glass construction, which controls the light accurately. Also shown is the characteristic light distribution curve of the Holophane R-r. Adaptations of this unit are illustrated on the right hand page.



THE ADAPTATIONS

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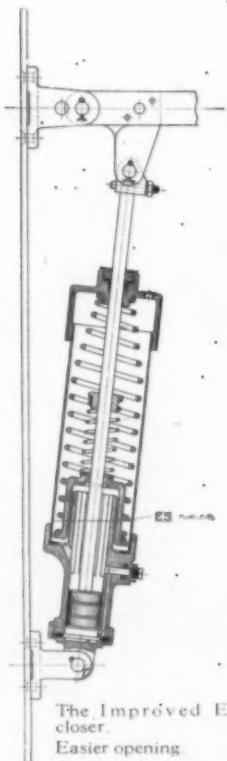
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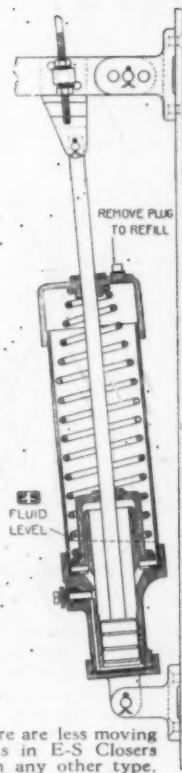
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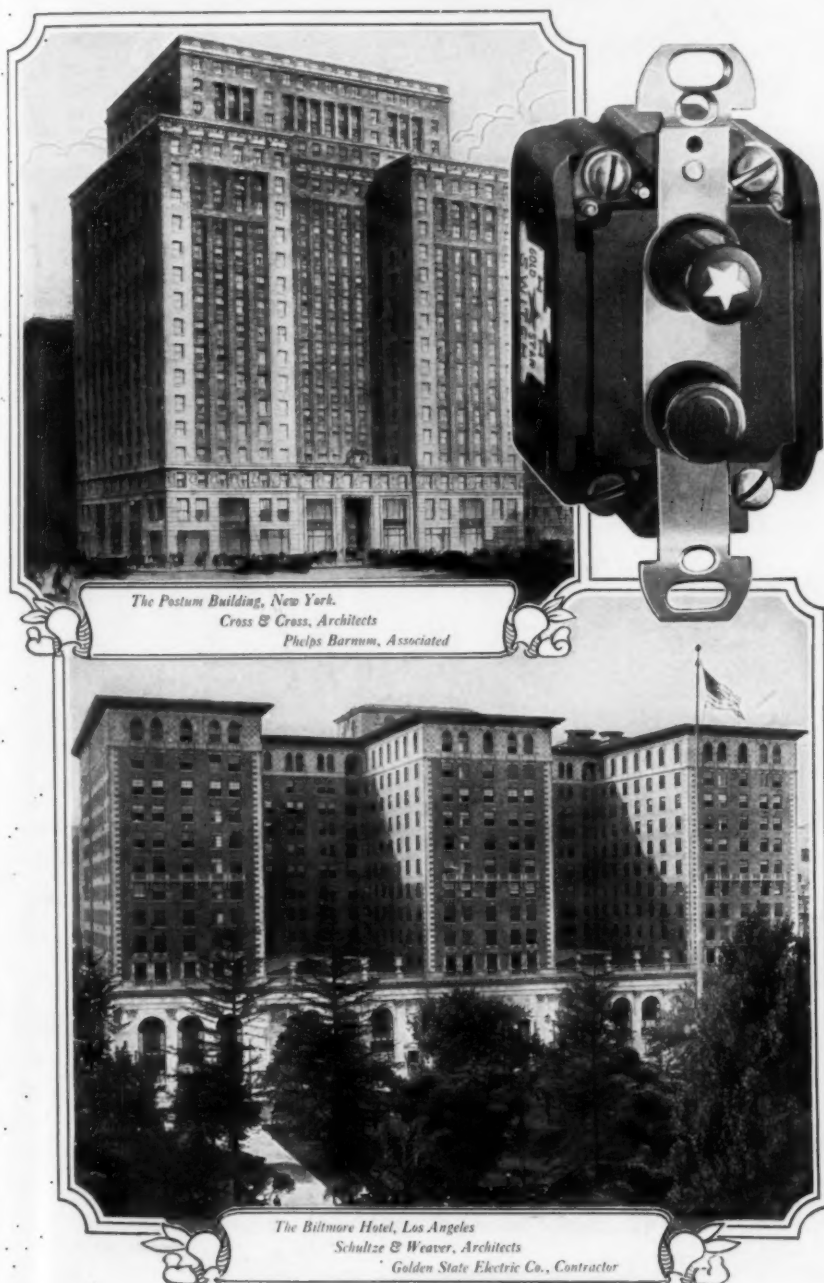
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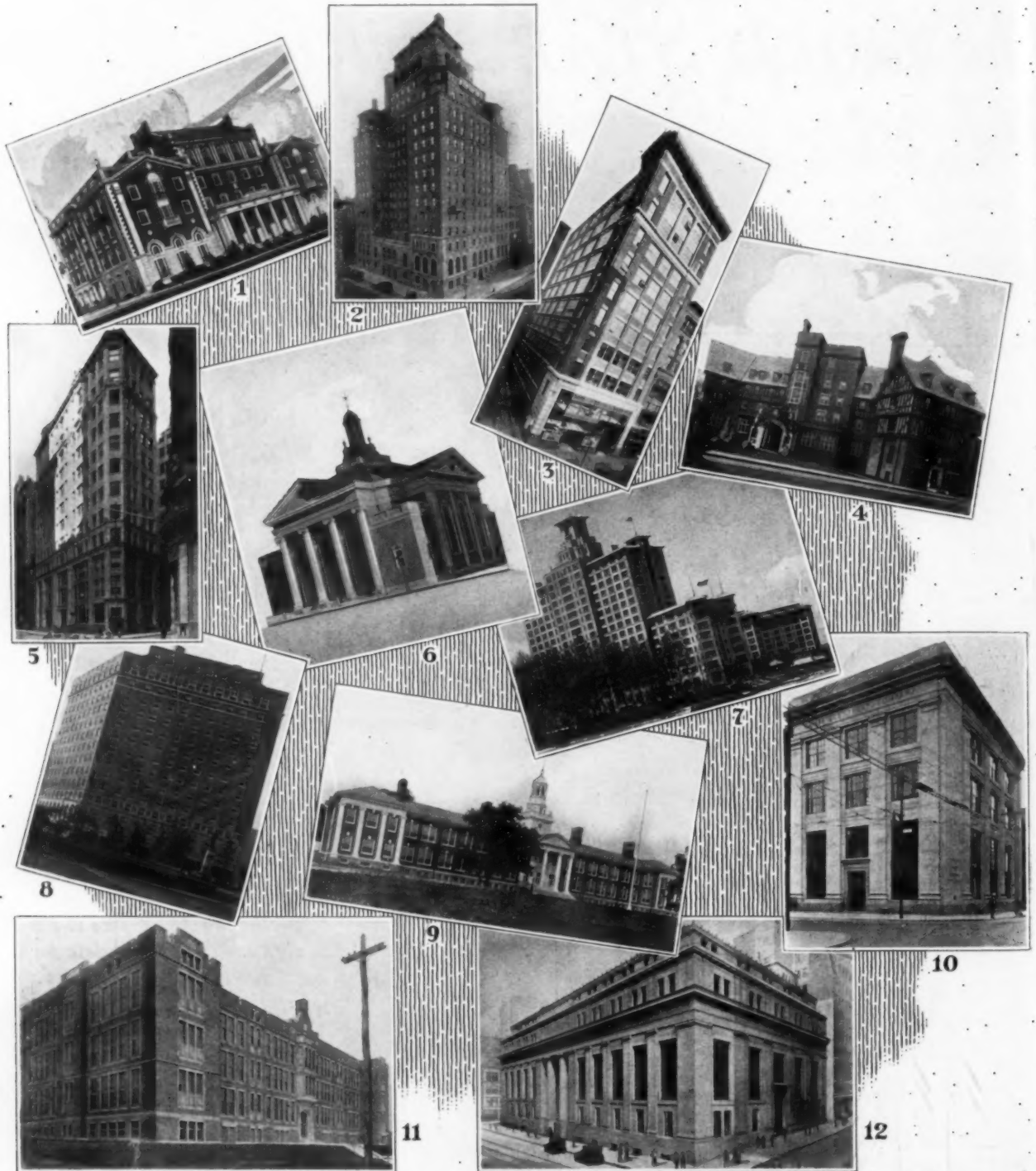
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¶ By simple addition you merely arrive at a collection of numerals.

¶ But when you measure that year by the things you have done in the hours or days or months it gave you, there is found an answer that serves to point out your shortcomings or to spur you on to greater success.

¶ By the latter method, we find that 1924 is the end of a perfect year for Banner Finish.

¶ Hundreds of testimonials from plasterers tell us that Banner is made as they want it.

¶ Contractors point to a saving in time and material on every Banner Finish Job.

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¶ It is the aim of Banner Finish to maintain this record during 1925.

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SHAVE it off—yes. But chip, peel or rub it off—never! The coating is what counts and **Economy** Rigid Conduit Coating is tough, elastic, adhesive enamel—baked on!

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SPECIFYING **FA** Panelboards expresses experienced judgment, for they serve better than others at lower cost. Furthermore, they are an index to the quality of the entire wiring job.

Your own reaction in seeing **FA** Panelboards in a new building is that of all architects, contractors and most owners—**FA** Panelboards are the sign of a better wiring job.

FA Safety Type Panelboards are made up of standardized sections, each panelboard shipped completely assembled, certain of fitting an **FA** Standardized Steel Cabinet. Plug and Cartridge Fuse Types, with or without controlled branches.

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Atmosphere

The old door-way, the arch, the balcony, the wrought-iron lantern—all make atmosphere.

The modern church, the office building, or the theatre, gain atmosphere by careful designs and an exacting selection of appointments.

Serenity in the church; efficiency in the office; awe and wonder in the theatre—that is the kind of atmosphere CURTIS LIGHTING with X-Ray Reflectors lends.

Curtis Lighting is mobile—it is versatile. The designs are excellent. Workmanship beyond question.

Curtis Lighting engineers are trained to understand—atmosphere.

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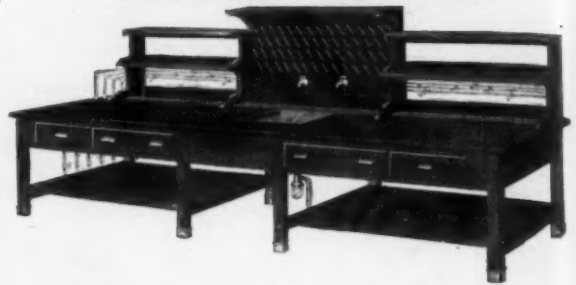
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A Book For Architects

THE new Kewaunee Book—416 pages, lavishly illustrated—many pages in colors—will interest and benefit any Architect who is engaged upon a School, Hospital or Manufacturing Plant.

Our line contains over 500 standard designs of Laboratory Desks and other Furniture, any of which we are in a position to ship immediately. We also manufacture special equipment to order.

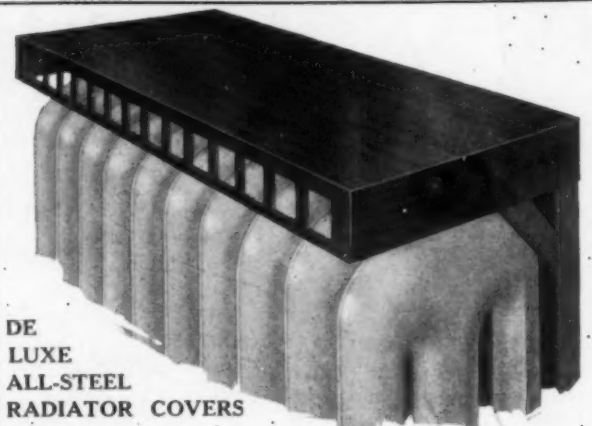
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Address All Inquiries to the Factory at Kewaunee

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LABORATORY FURNITURE EXPERTS

C. G. CAMPBELL, Treas. and Gen. Mgr.
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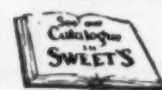
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ALL-STEEL
RADIATOR COVERS

SAVE THE COST OF REDECORATING

De Luxe All-Steel Covers fit either steam or hot water radiators. They deflect the upward current of air and distribute the heat evenly out into the room. Walls and draperies above the radiators are protected from the air currents and do not become discolored and dirty.



Furnished in beautifully grained wood finishes, or in flat tones, to match sample; offer the interior decorator an opportunity to bring radiators into harmony with the decorating scheme.

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Please forward me without obligation, illustrated folders on De Luxe All-Steel Radiator Covers.

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*Mary Imogene Bassett Memorial Hospital, Cooperstown, N. Y.
F. P. Whiting, New York City, Architect and Consulting Engineer.*

Panelboards to meet every Requirement

Recognizing the diversity of both the architectural and the electrical requirements of modern building structures, the aim of the General Electric Company has been to design panelboards flexibly adapted to meet any reasonable requirements which are presented.

In the G-E panelboards are combined the result of extensive research, wide experience, careful selection of materials, modern manufacturing methods and accurate assembly.

Compact in form, neat in appearance, conservative in rating, G-E panelboards combine the ultimate in effective control of electric circuits with maximum safety for the operator. They are designed and built to fulfill the requirements of the Electric Safety and National Electric Codes.

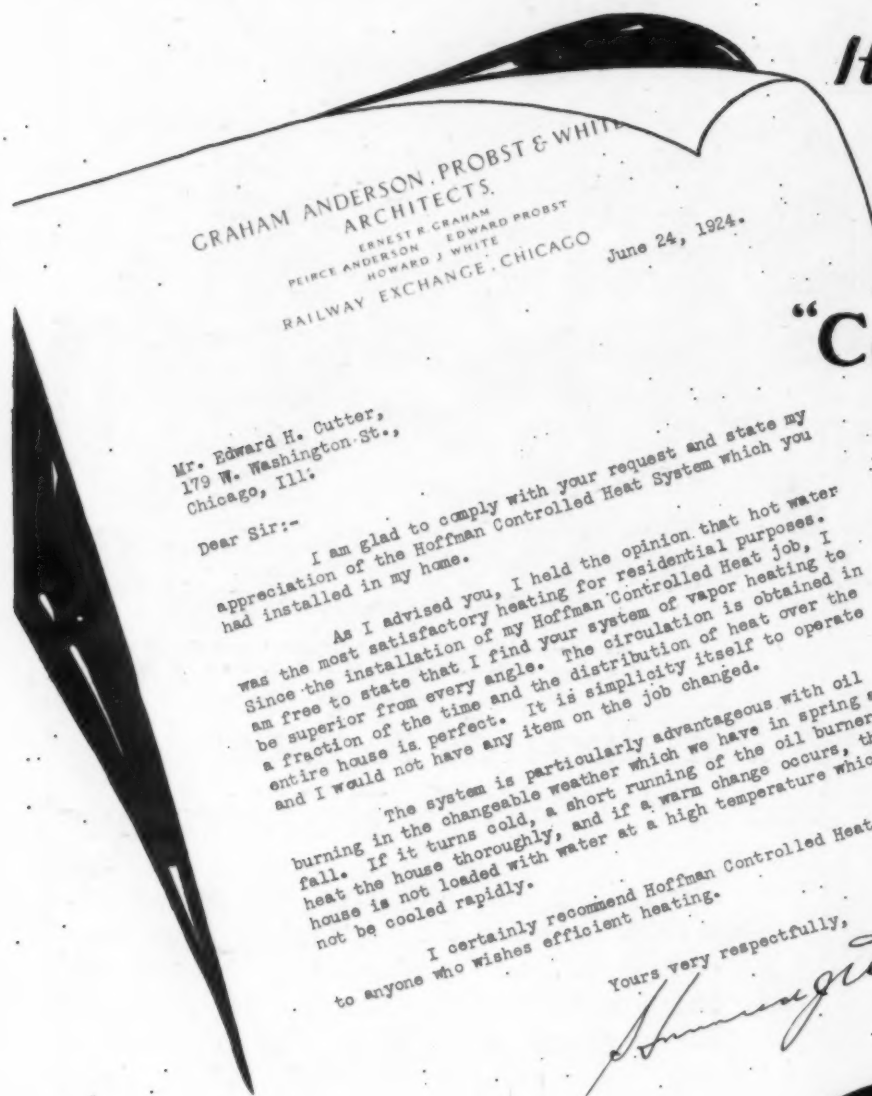


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GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN ALL LARGE CITIES

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It's easy to keep a building warm with HOFFMAN "Controlled Heat"

WHETHER for an office building, hotel; church or home, Hoffman "Controlled Heat" is equally effective. It meets the strictest requirements of a heating system.

Hoffman "Controlled Heat" insures heat comfort on the coldest days, and yet is adaptable to outside weather changes. The temperature of each room can be regulated easily and accurately by the Hoffman Modulating Valve.

The Hoffman "Differential Loop," with no moving parts, absolutely prevents a burned out

boiler—compared with mechanical appliances for the same purpose it is extremely simple.

Hoffman Modulating and Return Line Valves, with the other required specialties, make "Controlled Heat" one of the greatest forward steps in heating science. It is economical and reliable. It is flexible and silent. There is nothing more that can be demanded of a heating system.

A vast amount of valuable information on heating problems is to be found in the Hoffman "Data Book." We shall be pleased to send you a copy on request.

HOFFMAN SPECIALTY COMPANY, INC

Dept. C, 512 Fifth Avenue,

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HOFFMAN *CONTROLLED HEAT*

Stronger-Cheaper-Firesafe



Reinforced Stucco is as strong as Gibraltar and as durable as the Pyramids—because this man-made stone is stronger and more durable, thickness for thickness, than nature's stone.

Reinforced Stucco can be quickly and economically fashioned into designs and shapes which, in sheer beauty and architectural effect, rival sculptured stone or marble.

But the outstanding advantage of *Reinforced Stucco* is **ECONOMY**. *Reinforced Stucco* costs very little, if any, more than even standard wooden frame construction: *Reinforced Stucco* requires no maintenance, whereas the cost of painting a frame building amounts to as much, if not more, in 40 years, than the entire original cost of the building.

Even as primitive man practiced the principle of reinforcement by embedding reinforcing twigs in the clay of which he built his home—

So we, today, embed infinitely stronger *reinforcing wires* (or fabric) in *Stucco*, in order to make it stronger and permanently weather-tight—in order to "bind" the *Stucco* together, and to the building; and thereby prevent cracking and falling.

Before you build or remodel, write for a copy of our free book—
"Building a Permanent Home"

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(SUBSIDIARY OF PITTSBURGH STEEL CO.)

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OFFICES: Atlanta Cincinnati Chicago Cleveland Dallas Denver
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P214 is a base and reinforcement for stucco and plaster—it combines 6 building materials into 1; namely, sheathing, building paper, lath, "furring," reinforcement and nails.

It is applied either direct to studs or over sheathing or insulation.

When You Build REMEMBER these Things

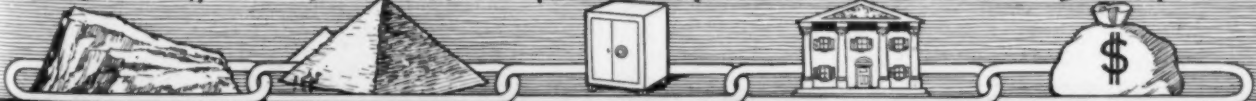
STRENGTH

DURABILITY

FIRE SAFETY

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ECONOMY



REINFORCED STUCCO HAS ALL OF THESE CHARACTERISTICS INDIVIDUALLY AND AS A WHOLE

A MILLION WINDOWS **Equipped Yearly**

with AMERICAN SASH CHAIN

During 1923 a million windows were equipped with smooth running American Sash Chain. The extensive use of this chain last year is manifestly a tribute to the service it is rendering in prominent structures throughout the world.

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Largest Manufacturers of Welded and
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Famous WEED Automobile Accessories



THE ONLY SAFE WATER IS A STERILIZED WATER

SWIMMING POOL SANITATION



The Swimming Pool at the U. S. Naval Academy, Annapolis, Md., where W & T Apparatus is Protecting the Health of the Bathers

The W & T Process of Chlorination, used by over 200 Pools, is the least expensive and most efficient method of Swimming Pool Sterilization.

A sterilized water cannot cause disease.

Technical Publication No. 21, containing full data and specifications will be mailed on request

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(D)

lathing



Siding

Section of Outside Wall of House, Showing Wool Between Studding

Mineral Wool for Building

Mineral Wool has superseded all other materials used for similar building purposes because it does "a great work at little expense." A house lined with Mineral Wool has an indestructible, fire-proof and vermin-proof guard; it protects the entire household. In the winter time it keeps the cold air out, facilitating proper heating and economy in fuel. In the summer it keeps the heat out.

This material, being of fibrous, inelastic composition, acts as a deadener and muffles all sound. It is considered the best insulator material on the market, making it a perfect refrigerating machine.

Mineral Wool makes life-long friends of all its users. If you are skeptical as to its power, let us demonstrate. We can prove all claims. Write us today.

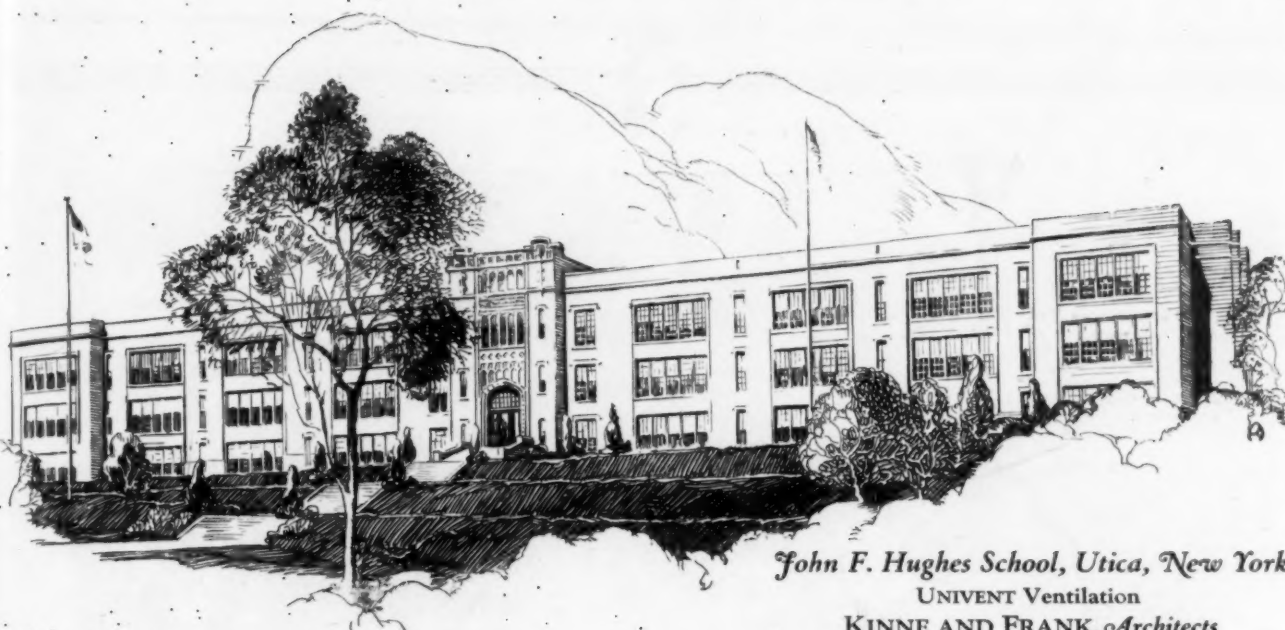
U. S. MINERAL WOOL CO.
280 Madison Avenue, New York

lathing



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Section of Sound-Proof and Fire-Proof Partition



John F. Hughes School, Utica, New York
UNIVENT Ventilation
KINNE AND FRANK, Architects
Utica, New York

There's no substitute for Health

It's more precious than a King's ransom. Good health and keen minds depend upon the air we breathe.

That's why Architects and Educators everywhere are properly ventilating their schools with Univent ventilation.

The Univent system brings the fresh out-door air directly into the classroom—cleans and warms it—and delivers it silently and without drafts to every part of the classroom.

And now—an even greater UNIVENT

The trend of progress is toward simplicity. Years of experimental research has made possible the building of a Univent that occupies no more space than an ordinary radiator.

It is extremely simple in operation and accessible for cleaning and inspection.

The low temperature, high capacity, non-corrosive copper radiator has sufficient capacity to warm the incoming air from zero to 110 degrees. It will last a lifetime.

An efficient, cleanable filter for cleaning the air of dust and soot particles may be furnished when required.

A low speed fan and motor with a capacity for handling 81,000 cu. ft. of fresh air per hour, silently and economically, is another distinct Univent feature.

If you are interested in good ventilation send for the latest copy of Univent Ventilation. No obligation.



Make school days happier
with the

UNIVENT
(TRADE MARK)

THE HERMAN NELSON CORPORATION *Moline, Ill.*
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The Fifth Avenue Hospital, being modern in every respect, uses the Kny-Scheerer Operating Room Light as well as other Kny-Scheerer equipment.



To Meet the Demands of Modern Surgery

Constant, unfailing service — perfect performance — these must be accomplished by every piece of equipment — especially in the Operating Room.

The Kny-Scheerer Operating Room Light gives uninterrupted service under all conditions. The supplementary gas light is a positive protection against any interruption when fuses blow out or the electrical current is shut off. The safety of the patient, the reputation of the surgeon and the hospital, require this double protection. With a combination of electricity and of gas a near daylight is produced — shadowless, strong and steady. Delicate operations can best be performed under this illumination. Send for our descriptive literature, describing the Light in detail.

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— Bed Pan
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X-Ray Apparatus and Equipment

Architects interested in hospital planning may have valuable assistance from the Engineering Service Department of the Kny-Scheerer Corporation without any obligation. During a quarter century of experience in equipping Hospitals, we have often assisted the Architect in his desire to effect substantial economies in equipment and arrangement.

The KNY-SCHEERER Corp.

OF AMERICA

119 Seventh Avenue Dept. L.

New York, N. Y.



No. 3 of a series of advertisements featuring prominent laundry installations



The Atlanta-Biltmore, Atlanta, Georgia. Schultze and Weaver, New York, Architects.

A section of the washroom—equipped with Cascade washers and Humatic extractors.

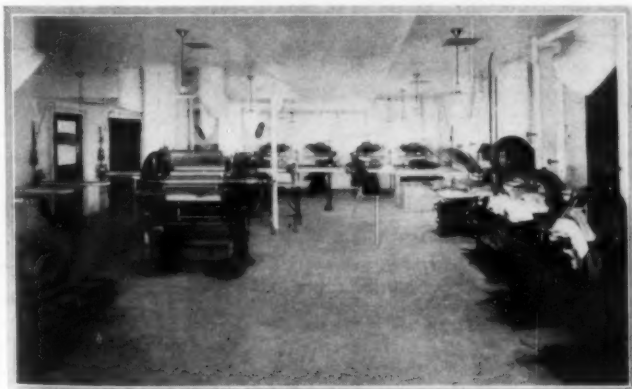
—and at the new Atlanta-Biltmore

One of the outstanding events in the hotel world during 1924 was the opening of the new Atlanta-Biltmore Hotel in Atlanta, Georgia—the finest link in the Bowman chain of super-hotels. And of course the management included a completely “American” equipped laundry as a part of the “back-of-the-scenes” service. This Atlanta-Biltmore laundry is one of the finest equipped and most efficient hotel plants in the entire South. The equipment will handle from



1,000 to 1,500 pieces of flat work per hour—and in addition there is an entirely separate department for laundering guests' apparel. Through this feature much of the laundry overhead is turned into profit.

A card will bring full details of the installations featured in this and other advertisements of this series.



A section of the ironing and finishing department.

At your service—a corps of laundry specialists

The American Laundry Machinery Company maintains a corps of engineers who have gained wide experience in planning and equipping most of this country's foremost hotel, commercial and institutional laundries.

If you have any questions pertaining to modern laundry practice you will find consultation with these specialists advantageous. This service is gladly offered you without any obligation whatever.

The American Laundry Machinery Company Norwood Station Cincinnati, Ohio

THE CANADIAN LAUNDRY MACHINERY CO., Limited
47-93 Sterling Road, Toronto, Ont., Canada

Agents: BRITISH-AMERICAN LAUNDRY MACHINERY CO., Limited
36-38 Victoria St., London, S. W.-1, England



Sturtevant Stationary Suction Sweeping System installed in Copley Plaza Hotel, Boston, Mass.

In Old New England

Sturtevant Stationary Cleaner in Boston's Copley Plaza

Here, this installation is giving perfect satisfaction with practically no cost for maintenance.

Architects! Specify Sturtevant Stationary Suction Sweeping Systems for the buildings you are now planning.

By so doing you give your clients the most durable suction sweeping systems on the market today. And you have the assurance and guarantee of Sturtevant that the cleaner will meet with the entire satisfaction of your clients.

We say: "Our cleaner is superior to all others." Ask us to prove it.

B. F. STURTEVANT COMPANY

Plants Located in

Hyde Park, Mass. Framingham, Mass. Sturtevant, Wis.
Camden, N. J. Berkeley, Cal. Galt, Ontario



Sales engineering offices and direct representatives in every commercial center of the world

153

HESS CABINETS and MIRRORS

Snow-White Steel



Rapp & Rapp, Architects

In the Windemere—East

THE fine New Windemere-East Hotel, Chicago, is equipped with Hess snow-white steel cabinets. The artistic design, the beauty of the snow-white enamel, and the durability of the pressed steel construction are rapidly making the Hess the favorite medicine cabinet for high grade hotels, apartments, and office buildings.

See Sweet's Index; or write for illustrated "Cabinet and Mirror" catalogue.

HESS WARMING & VENTILATING CO.
Makers of Hess Welded Steel Furnaces
1216 S. Western Avenue, Chicago

Stewart's IRON FENCE

STANDARD OF THE WORLD



There is a distinctive Stewart design for the correct completion of any architectural plan, for town or suburban home, modest bungalow or country estate.

Book of Designs "C" sent upon request

We also manufacture grilles, balconies, partition railings, folding gates, miscellaneous iron and wire work and chain-link wire fence.

Architects' designs executed in strict accordance with their specifications

THE STEWART IRON WORKS COMPANY
CINCINNATI, OHIO, U.S.A.
"The World's Greatest Iron Fence Builders"



Interior in the residence of P. C. Chancellor
Millbrook, N. Y.

Edward Smith, Architect
Poughkeepsie, N. Y.

Save the Window and Wall Space

Every woman objects to radiators because they interfere with her scheme of interior decoration. They always happen to be just where she would like to place a chair or table.

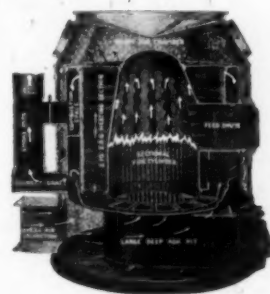
By using the Kelsey Warm Air Generator, you can give your client every advantage in the way of heating equip-

ment; and yet conserve the wall space. The warm air may be brought in through registers in out-of-the-way places.

There are many other advantages in using the Kelsey Warm Air Generator, such as a continuous supply of fresh, warm air, with just enough moisture, supplied by the automatic humidifier, to make 70° feel like 72°. Kelsey fuel consumption is extremely low, the heater is the heaviest on the market and built for a lifetime of efficient service. It is totally unlike any other heater, and there are scientific reasons for its effective and economical performance.

Our Engineering Department offers the fullest cooperation to the architect, and will furnish detailed plans and specifications for each installation.

Write for "Kelsey Achievements," and keep it on file for reference. It contains valuable information.



Sales Offices
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THE KELSEY
WARM AIR GENERATOR
Trade Mark Reg. U. S. Pat. Off.
251 James Street, Syracuse, N. Y.

Dealers
Principal Cities



A Monograph of the Work of Mellor, Meigs & Howe

With Preface by Owen Wister

American architecture includes no domestic work more distinctive and full of character than that of these Philadelphia architects, and few designers are as able to bestow upon a building the appearance of spacious, informal dignity desired today and expressed in the work of this firm.

¶ Here there is presented in one volume a review of most of their best work. It includes large half-tone cuts from original photographs of residences, chiefly country or suburban, of other domestic buildings, farm structures, a few clubs, college or fraternity buildings, and a number of structures of other kinds. Most of these items are accompanied by plans and other drawings, sections, and details of interior trim. The materials used in these buildings are wood, stone, brick, stucco, and combinations of all these, and the structures illustrated are of many widely different architectural styles, each interpreted with that taste, skill and close attention to detail for which the firm is well known.

¶ Many of the items presented here include loggias, terraces, gardens and other out-of-door work which is developed with the care and thought which characterize the buildings themselves, and full plans of grounds and gardens accompany most of the illustrations. This is a volume which should be included in the working library of every architect and landscape architect.

212 pages; 12 x 16 inches; lavishly illustrated with half-tone plates of exteriors and interiors; printed on heavy coated paper, and bound in cloth.

Price \$20

ROGERS AND MANSON COMPANY

383 Madison Avenue, New York



Aaron Burr's daughter

once owned this historic building, which is now the Claremont on Riverside Drive, one of America's famous road-houses.

Built before 1776, this building is wonderfully preserved today. Rust-resisting Toncan Metal is used for all sheet metal work as a safeguard against the ravages of time and the elements.

While Toncan surpasses all iron-base metals in rust and corrosion-resisting qualities, it costs but little more than common steel.

Write for full information on Toncan Metal.

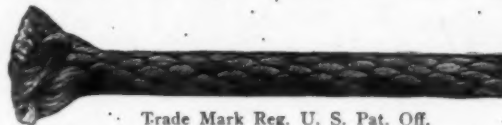
UNITED ALLOY STEEL CORPORATION, Canton, Ohio
Branches in Principal Cities



THIS IRON WILL ENDURE

UNITED ALLOY STEEL CORPORATION

Samson Spot Sash Cord



Trade Mark Reg. U. S. Pat. Off.

Made of extra quality stock, carefully inspected and guaranteed free from all imperfections of braid or finish.

Does not contain the loaded centre often found in common cord, which increases the weight and price per foot and greatly decreases the durability over pulleys

Samson Spot Cord can be distinguished at a glance by our trade mark, the Colored Spots, used only with this quality.

The difference in first cost between Spot Cord and the cheapest kind for a whole house is often less than the expense of replacing one broken cord.

Send for sample card

Samson Cordage Works

Boston, Mass.

RUUD AUTOMATIC GAS WATER HEATERS

A Special RUUD Offer To Architects

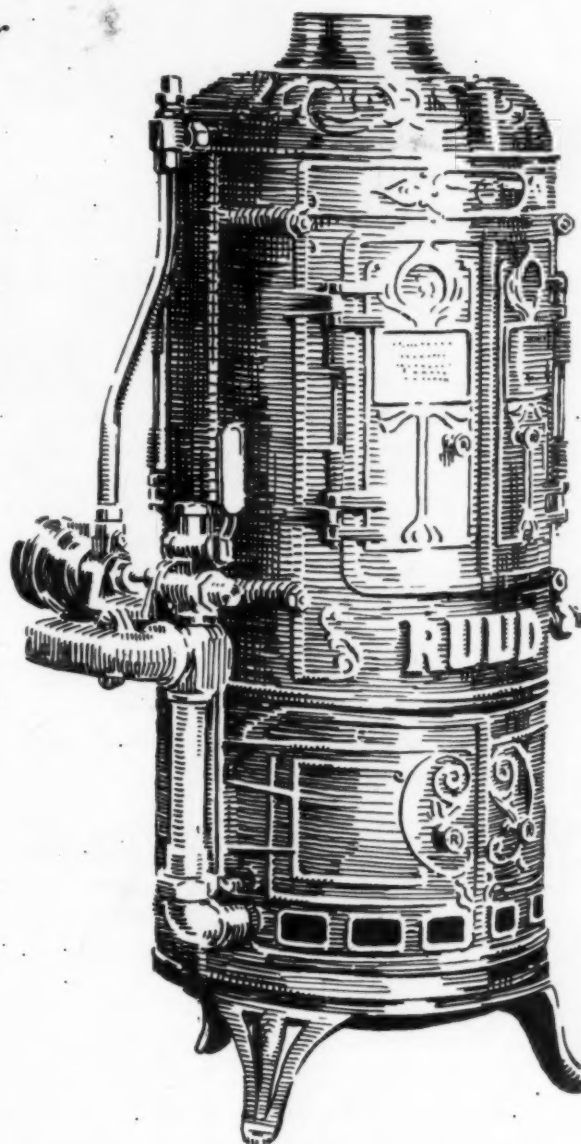
During November and December

ARCHITECTS can obtain an especially attractive price on a Ruud Automatic Gas Water Heater for use in their own homes. An unusual opportunity to equip your home with Ruud Perfect Hot Water Service. Visit or phone the nearest RUUD Branch or write Department C.



The Ruud Specification Folder

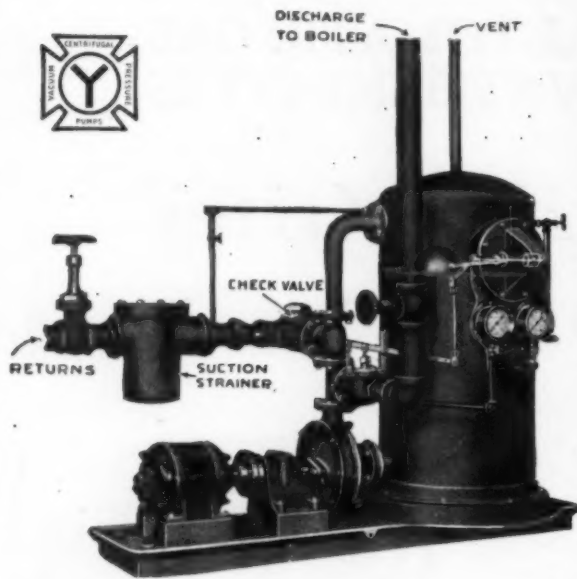
*A source of hot water information
—complete—convenient—accessible.
It fits your file—serves every
possible hot water specification. A
copy mailed FREE upon request.*



Ruud Manufacturing Company

Factories in Pittsburgh, Pa., and Toronto, Ont.

BRANCH OFFICES IN ALL LARGE CITIES



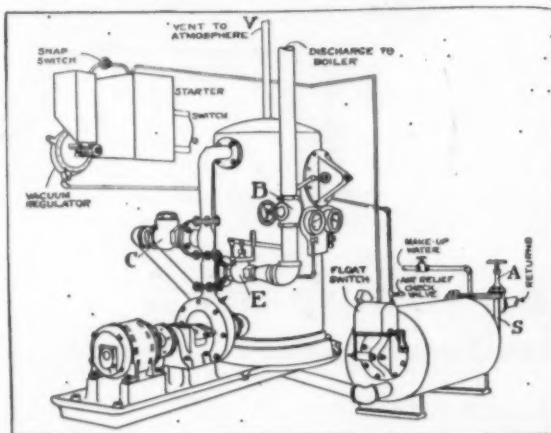
Simplicity is its big advantage

THE simplicity of the Young Centrifugal Vacuum and Boiler Feed Pump is clearly shown in the illustration above. The line drawing reproduced below also reveals the simplicity of the Pump when equipped with automatic vacuum control and with float controlled accumulator tank. This latter installation is particularly desirable where there is blast or other radiation at a low level that should be kept free from condensation.

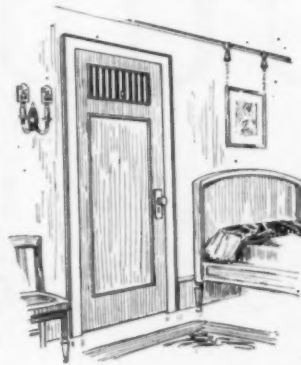
There is no question of the superiority of Young Pumps for vacuum and low pressure boiler feed work. The fact that these pumps are the acme of simplicity enables an ordinary fireman to take care of their operation with ease.

YOUNG PUMP COMPANY

230 East Ohio Street, Chicago
Factory: MICHIGAN CITY, INDIANA



VENTILATION WITHOUT LIGHT



Excellent Ventilation at Lower Installation Cost

The aim of every architect in designing a building is to keep the cost within reason, but at the same time to create something that is a monument to his skill.

The installation of Ventadoors costs less than transoms, they are far more attractive in appearance and produce excellent ventilation—a combination hard to beat.

Write for literature.

Van Zile Ventilating Corp.
280 Madison Avenue, New York City.



VENTADOOR

a Ventilating Panel for Doors

PUMPS

A type for every service

Bulletins on request

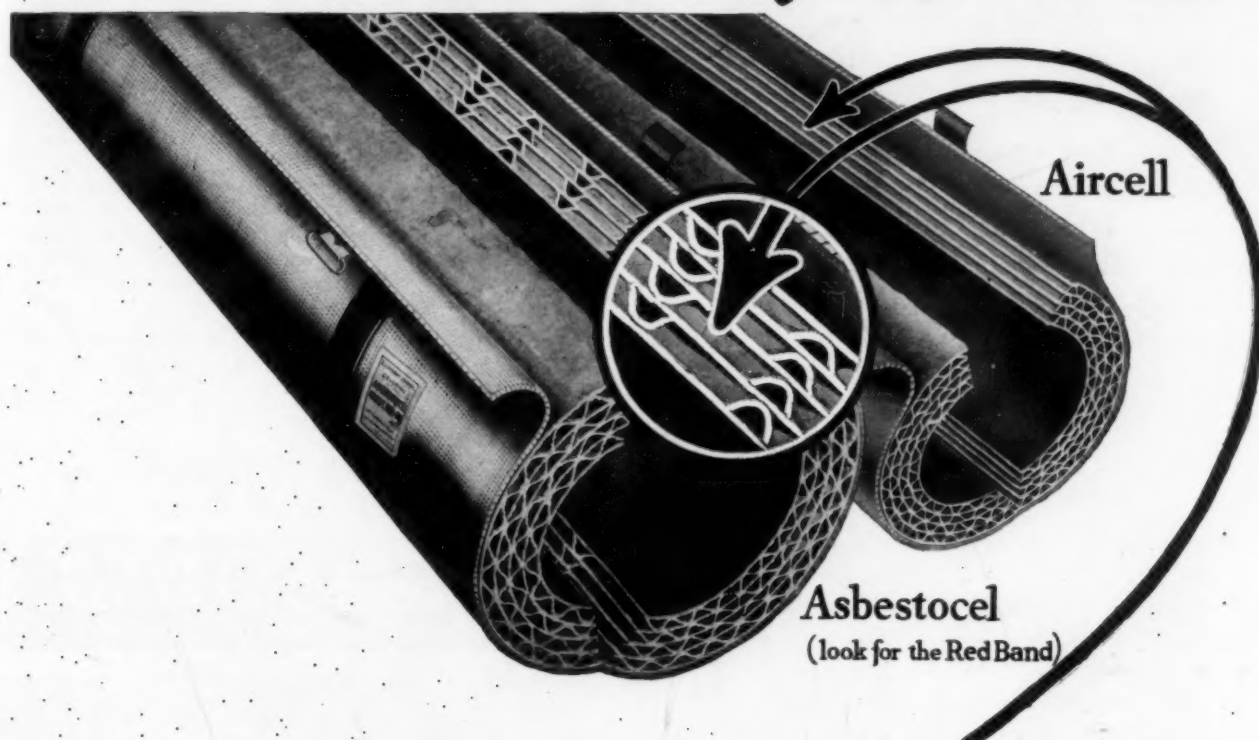
THE GOULDS MANUFACTURING CO.

SENECA FALLS, N. Y.

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GOULDS

Over 20 times the number of air-cells



TWENTY small closed cells are more efficient as a heating-pipe insulation than one large open cell.

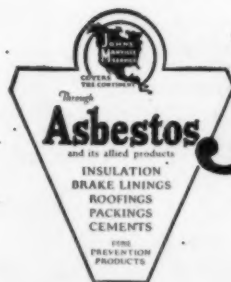
Johns-Manville Improved Asbestocel has over twenty times the number of air cells per 3 foot section than an equal length of ordinary pipe covering. Cross corrugations running around the section break up the lengthwise corrugations into small, closed, isolated cells. In ordinary pipe covering the corrugations

extend the entire length of the section and are open at the ends. Through them air may circulate freely.

Because of this greater number of small cells, Improved Asbestocel saves more heat and more coal. And it lasts longer because added corrugations give increased strength.

Specify Improved Asbestocel. You can always identify it by the red band at each end of every section.

JOHNS-MANVILLE Incorporated, 292 Madison Avenue at 41st St., New York City
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JOHNS-MANVILLE

Improved Asbestocel

The DUNHAM REG. TRADE MARK HEATING SERVICE

ONE of the landmarks of Chicago's famous "North Shore" is the Dunhamized residential Lake Shore Drive Hotel which is located at No. 181 on The Drive.

This nationally known hotel is beautifully situated on the shores of Lake Michigan, adjoining picturesque Lincoln Park, and because of its appointments and cuisine is one of the city's social centres.



THE LAKE SHORE DRIVE HOTEL, Chicago

William A. Buescher, Manager

Fugard & Knapp Architects Wm. J. Hoyer Co. Htg. Contractors P. G. Burt Con. Engineer
21750 sq. ft. radiation — 734 Dunham Radiator Traps and Valves

C. A. DUNHAM CO.
230 East Ohio Street, Chicago

The Same Fire Warms the Building and Heats Hot Water

Economy of operation is the by-word in these days of high fuel cost, so if you specify EXCELSO, the heater that supplies unlimited quantities of hot water without cost, by utilizing heating plant fire, it is sure to delight your clients.

With this feature of economy go other EXCELSO advantages—no matter how insistent the demand, EXCELSO keeps the tank continually filled; a simple and thorough construction insures dependability and durability of service; the time and effort of a separate hot water heater fire is eliminated. No building can be quite modern without the very efficient and very economical EXCELSO water heater.

Tell us the type of building and heating plant, and we shall be glad to recommend the proper model and size of EXCELSO, together with other details in which you will be interested.

EXCELSO SPECIALTY WORKS, Inc.
369 EXCELSO BLDG. BUFFALO, N. Y.

EXCELSO WATER HEATERS
Sold by All Plumbers and Steamfitters

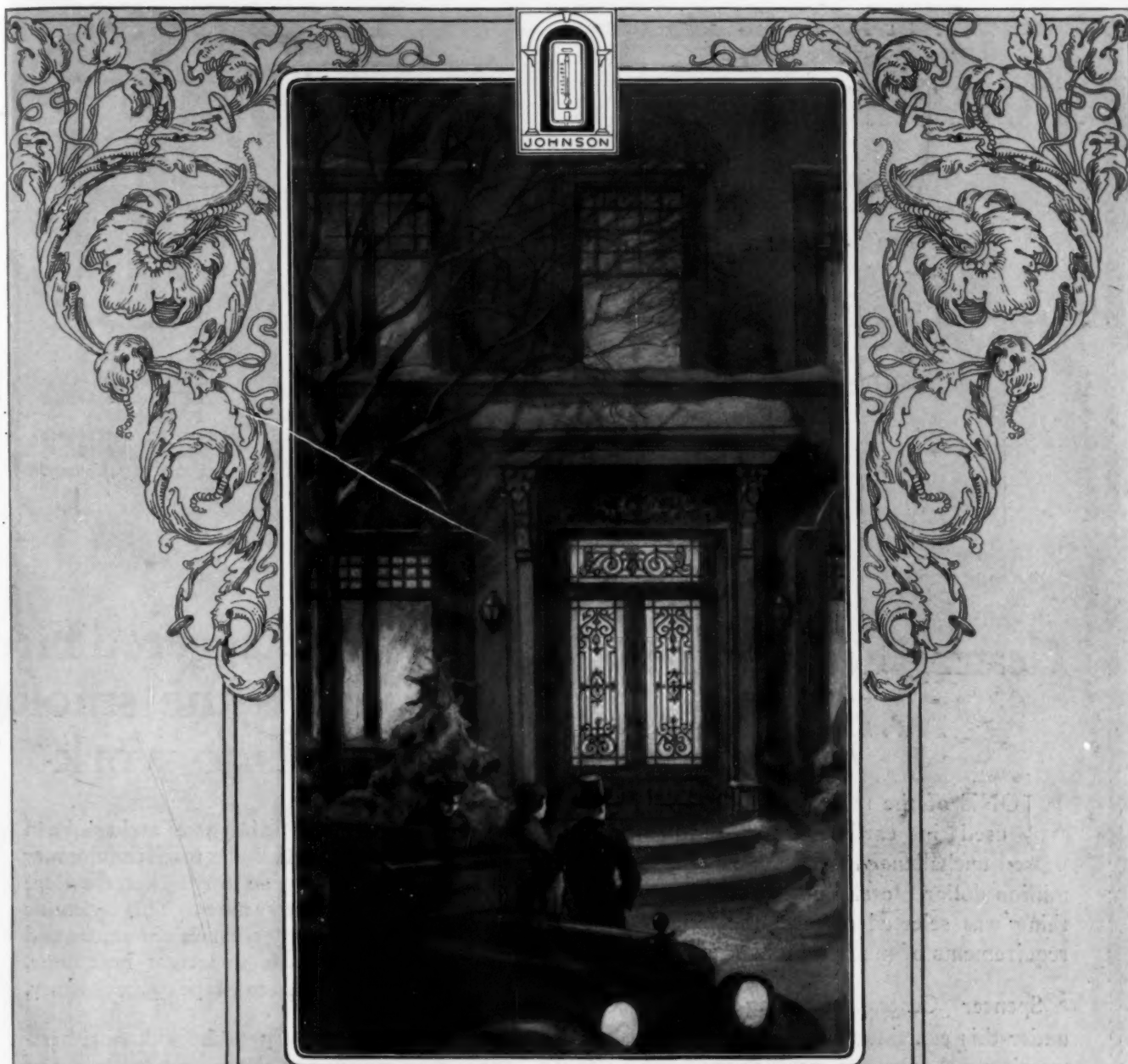


WINTERTIME
tests the real worth of a ventilator. Never have we had a complaint of a snow-clogged

"GLOBE" VENTILATOR

"GLOBE" Ventilators are constructed to give perfect ventilation at minimum expense and they require no attention whatever.

GLOBE VENTILATOR CO.
Troy, N. Y.



What little more does it mean to add the cost of the Johnson Pneumatic System of Temperature Regulation to the already fine home, or office structure. And what greatly more it means to secure the refinements which The Johnson system gives. On the one hand, the cost will be returned the first three years in the saving of fuel. On the other hand, once installed and the benefits derived, its worth becomes invaluable.

JOHNSON SERVICE COMPANY, MILWAUKEE

AUTOMATIC TEMPERATURE REGULATION FOR 38 YEARS TWENTY-EIGHT BRANCHES UNITED STATES AND CANADA

JOHNSON

HOTEL ROOSEVELT



United Hotels Company of America, Owners
George B. Post & Sons, Architects

Cleaning Requirements for Hotels

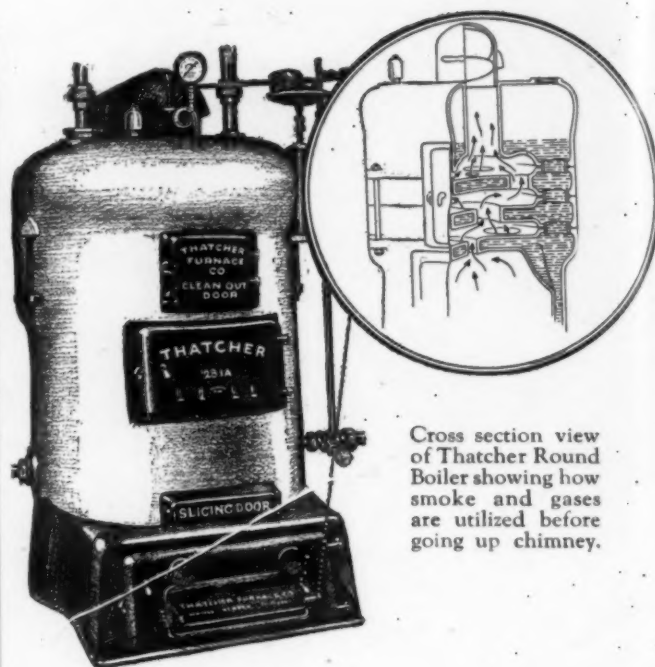
NONE of the mechanical equipment used in earlier United Hotels passed unchallenged for the new twelve million dollar Hotel Roosevelt. Everything was selected to meet the highest requirements of modern hotel science.

Spencer Central Cleaning Systems under this exacting test were not found wanting. Again our installations keep pace with the growing list of United properties.

Architects planning hotels are invited to investigate the Spencer System, which is the recognized standard for fine buildings of all types.

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HARTFORD, CONN.

SPENCER
CENTRAL
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SYSTEMS



Cross section view of Thatcher Round Boiler showing how smoke and gases are utilized before going up chimney.

Thatcher "Staggered Fire Travel" puts the smoke and gases to work

BEFORE the valuable hot gases and smoke in a Thatcher Round Boiler reach the chimney they must pass back and forth over the large heating surfaces many times. This scientific "Staggered Fire Travel" compels the smoke and gases to give up their important heat units, instead of allowing them to escape up the chimney.

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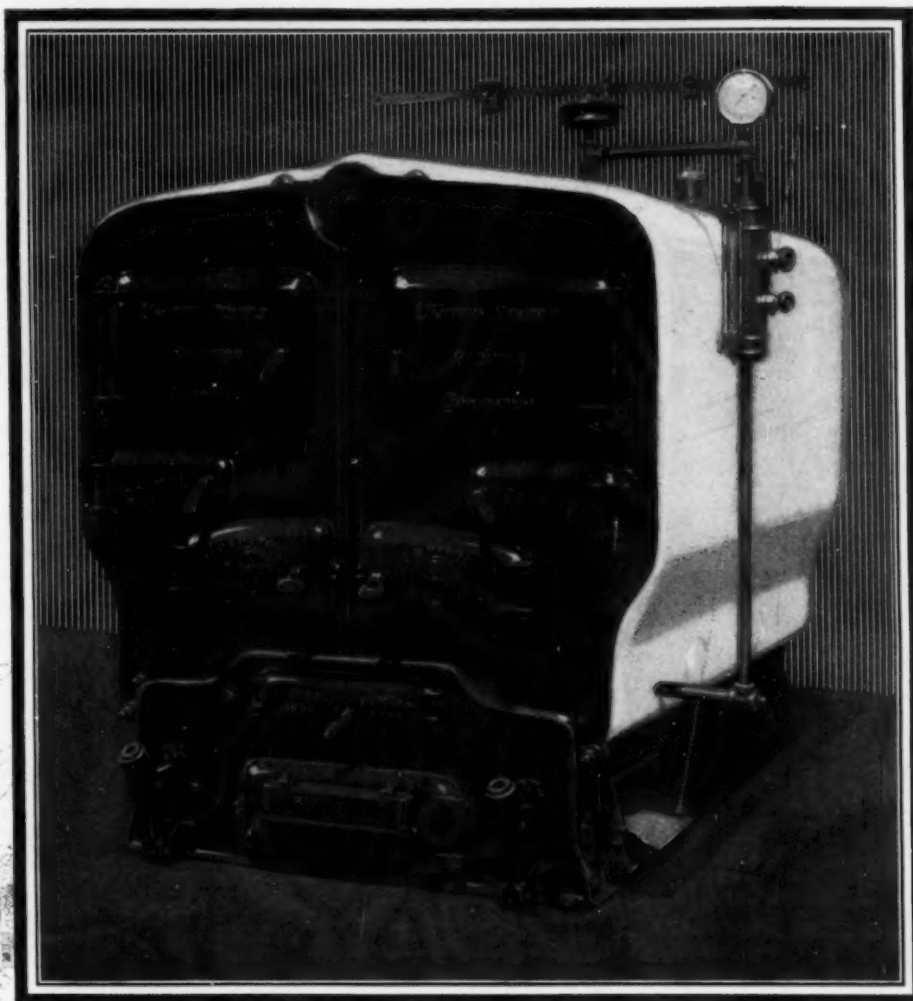
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A factor of even greater importance than our broad guarantee is the 35 years of honest, conscientious manufacture back of every Capitol Boiler.

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that in both public and private buildings, wherever Capitol Boilers are used, they have unfailingly demonstrated that quality.

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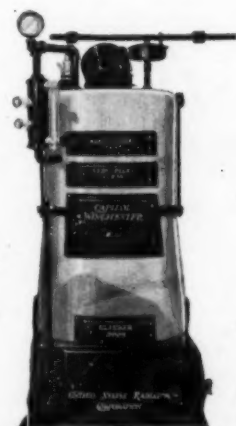
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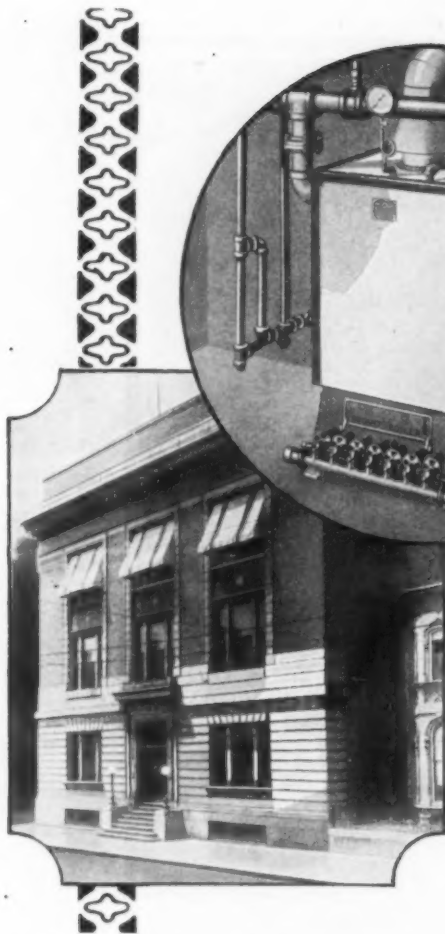
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The Cincinnati & Suburban Bell Telephone Company buildings now heated with Bryant Gas Boilers

A UNIFORM temperature in all kinds of weather, without labor or attention, is now maintained in all these buildings. Our engineering department will gladly co-operate with you in solving any heating problem.

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How we know it's smokeless

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Ringelman Chart of a recent test run on an IDEAL Smokeless Boiler is reproduced below. The boiler under test was a 13-section, 36" Smokeless, operating at 80% of rating. The fuel was particularly smoky—Island Creek Bituminous—and analyzing as follows:

| | |
|---------------------------|-------|
| Volatile Matter | 36.66 |
| Fixed Carbon | 56.89 |
| Ash | 6.45 |
| Sulphur | 1.66 |
| B.T.U. | 14330 |

At 9:10 fire was leveled with a hoe, incident to developing one and one-half smoke, which subsided to zero in one and one-half minutes.

At 9:15 a charge of fuel was fired, developing number one smoke, which dropped to one-half in three minutes and continued one-half for two additional minutes, dropping to zero one minute thereafter.

Total smoking period during firing: six minutes

or practically smokeless. No attention thereafter until stoked at 9:50, when it instantly developed number three for a flash, subsiding immediately to zero four minutes thereafter, etc.

The time of greatest smoke is at any stoking period. The time of least smoke is at any firing period. Between these two periods there is no smoke.

The IDEAL Smokeless Boiler meets the requirements of every smoke ordinance; it is doing much for the cause of cleaner cities and greater fuel economy. For complete information write Dept.T-266.

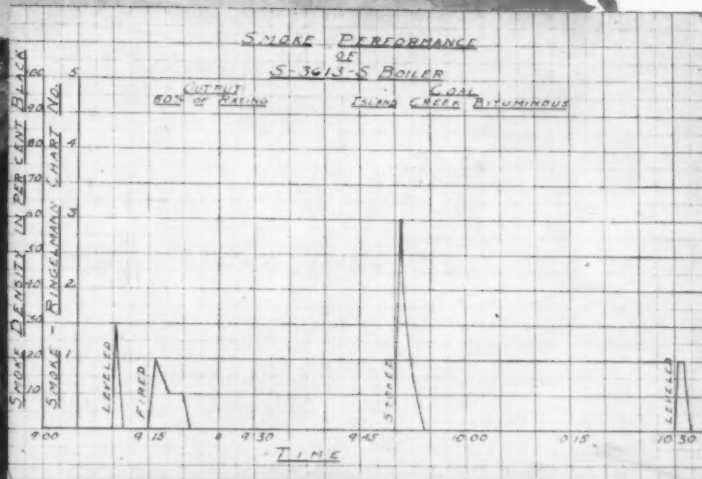
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This mirror, focused on the test stack, is under constant observation of the tester. With stop watch in hand, he stands directly beside the fireman.



Contractor and Plumber Are Forgotten—But They Remember You

From the owner's viewpoint, every instance of fault or failure in a building or home of your design is a direct reflection upon your reputation as an architect.

Seldom is the owner justified in laying such complaints at your door, but because he has forgotten those who actually fabricated his property, you are held responsible.

The annoyance and embarrassment resulting from defective and corroded piping is avoided by many architects who have taken the pains to "sell" their clients the long-life Wrought Iron Pipe marked "Reading."

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GENUINE WROUGHT IRON



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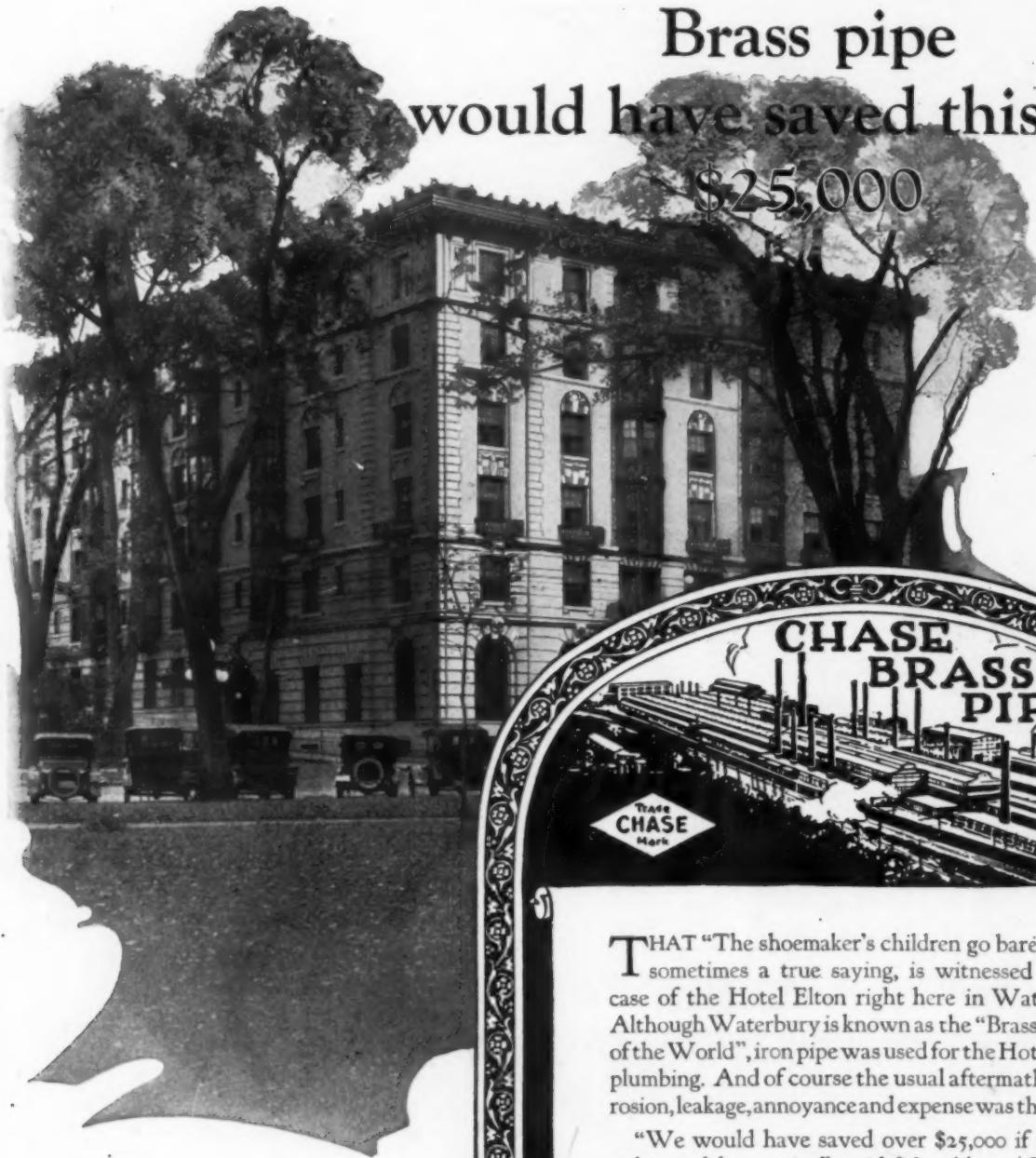
Service and Permanence

were the ideals aimed for in the erection of the Postum Office Building. It will be significant to those who decide upon the piping requirements for similar installations that the major requirements of this building were met with "NATIONAL"—The Recognized Standard of Wrought Pipe. "NATIONAL" Bulletin No. 25 contains useful data on pipe for building purposes. A copy will be sent upon request.

NATIONAL TUBE COMPANY, PITTSBURGH, PA.

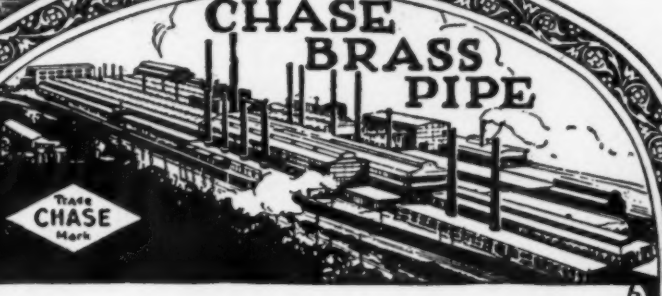
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Associate Architects
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**CHASE
BRASS
PIPE**

THAT "The shoemaker's children go barefoot" is sometimes a true saying, is witnessed by the case of the Hotel Elton right here in Waterbury. Although Waterbury is known as the "Brass Center of the World", iron pipe was used for the Hotel Elton plumbing. And of course the usual aftermath of corrosion, leakage, annoyance and expense was the result.

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CHASE Brass Pipe is the pipe of lowest "final expense". Every length is stamped with the CHASE name and the CHASE Diamond trademark — the stamp of guaranteed quality.

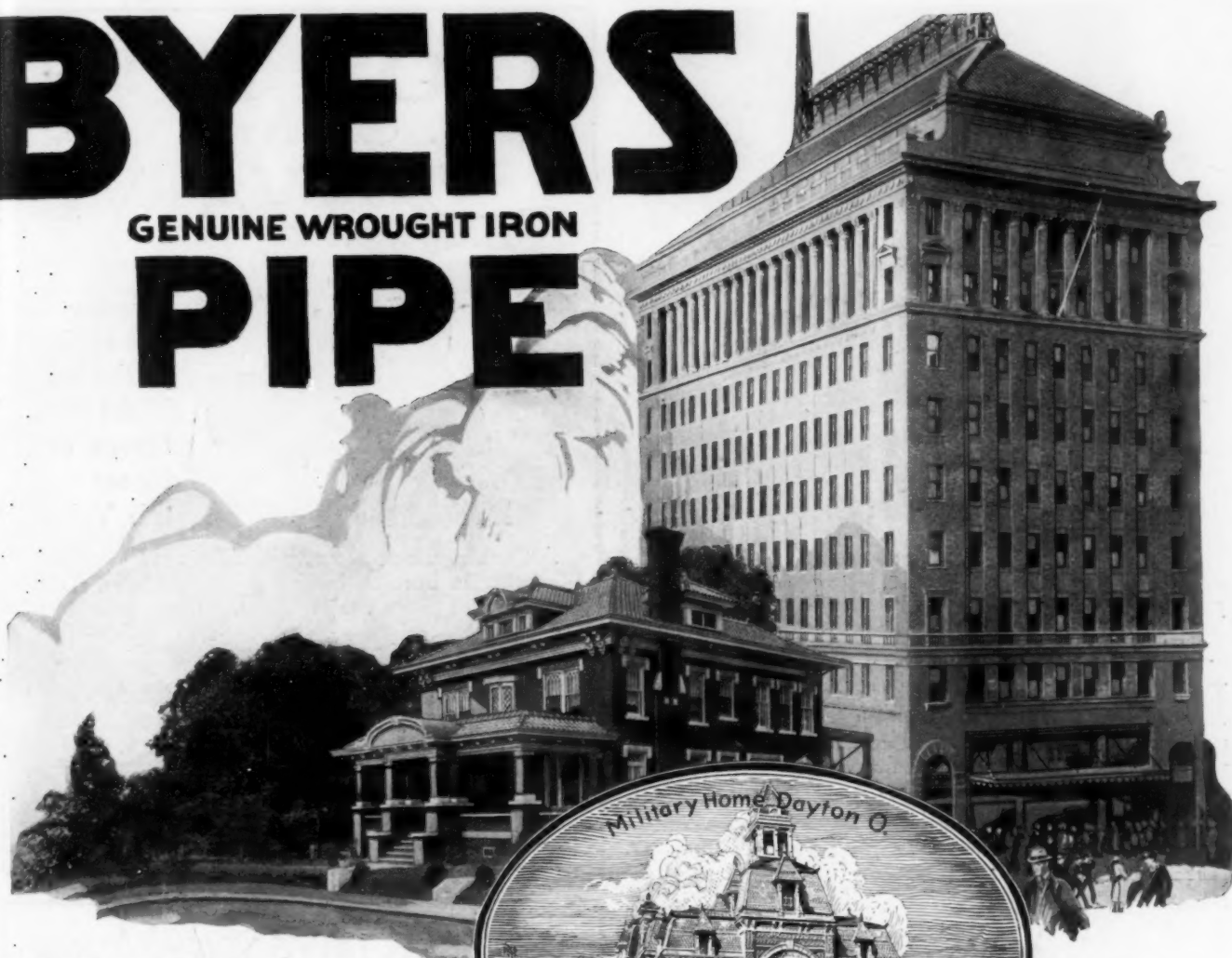
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LEFT: Residence at Wheeling, W. Va. Architect: Albert F. Dayton. Byers pipe for Plumbing and Heating.

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THE durability of a plumbing, heating or power system depends, above all, on the pipe. Year in and year out, corrosion is viciously attacking the pipe metal from within. The smallest leak spells expense and damage tenfold greater than the cost of the pipe.

Byers pipe is made of genuine old-fashioned wrought iron, incorporating layer upon layer of microscopic silicate bands which protect the metal from corrosion. These barriers against rust and

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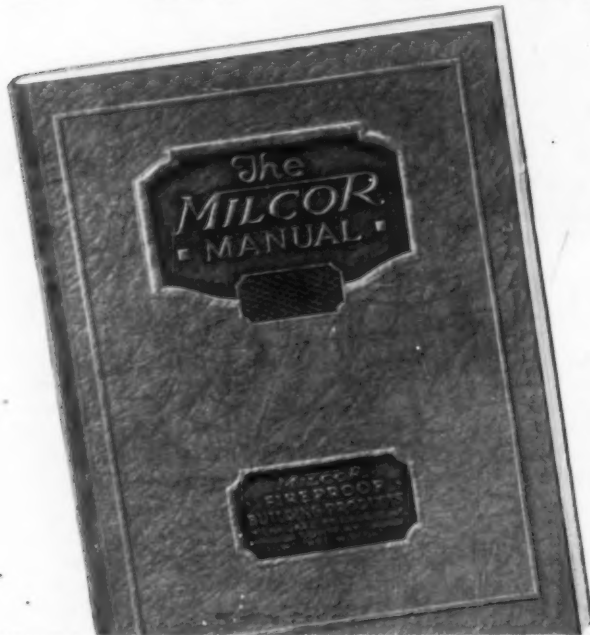


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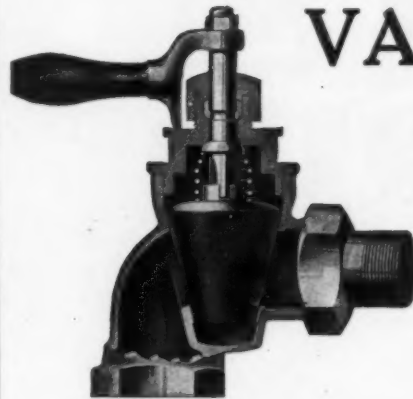
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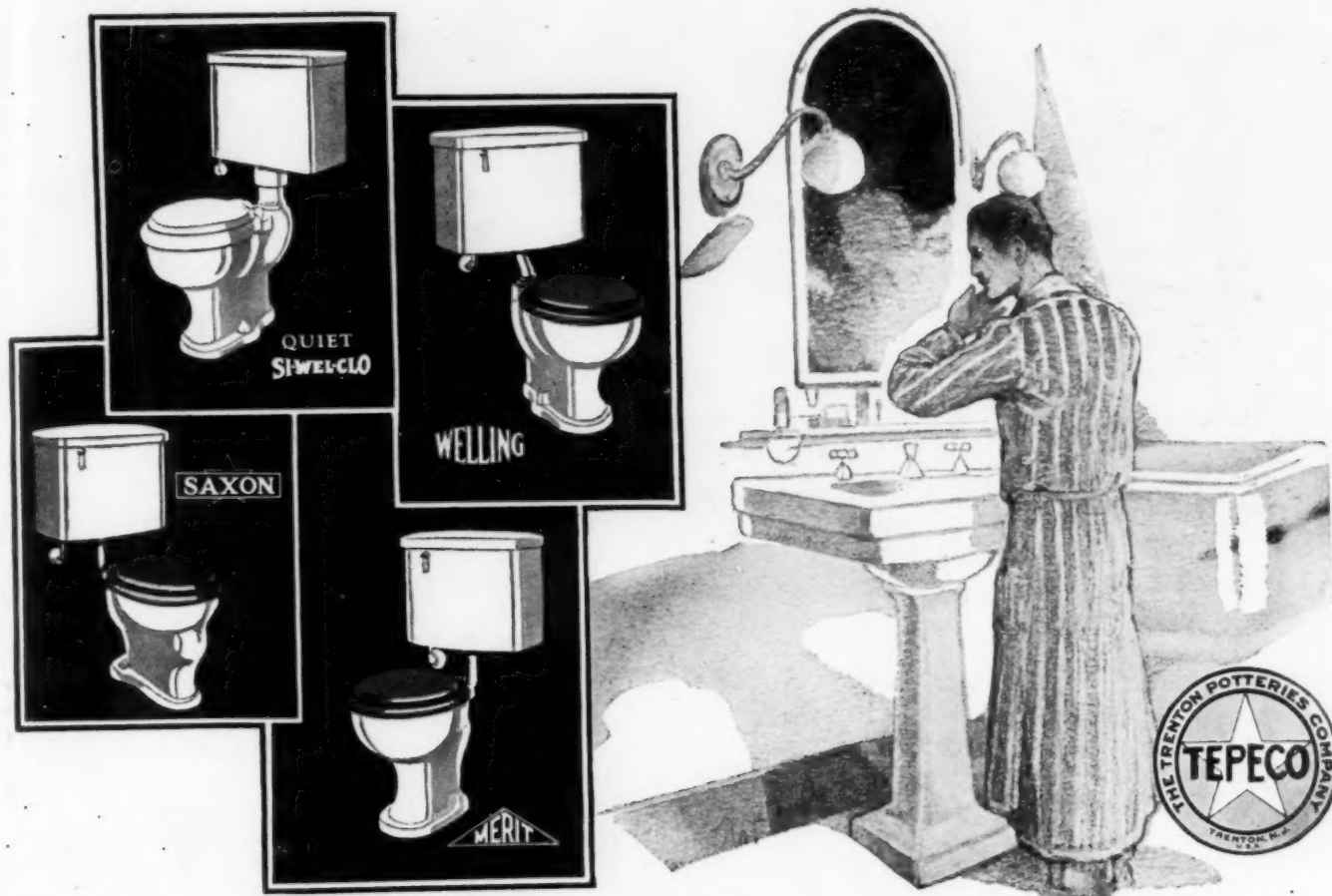
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Water Supply System

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One of good quality is a protection against foul air, sewer gas, and disease germs. It is a protection against repairs to tank and fittings. "Tepeco," the world's largest maker of All-Clay Plumbing Fixtures, offers for residential purposes the four recognized types—each in its class, and at its price the best that can be made. We believe it will pay you to install one of them.

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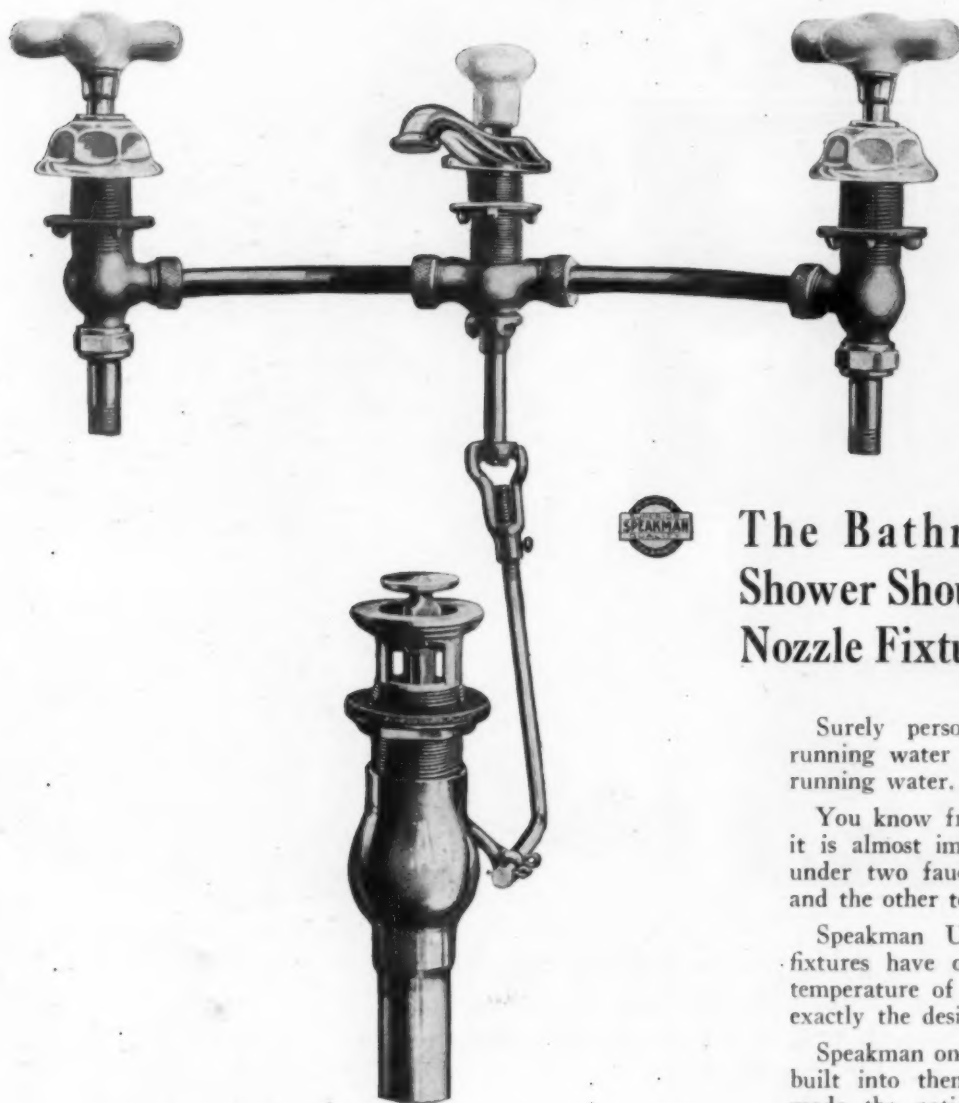
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FOR EVERY PLACE AND PURSE



The Bathroom That Has A Shower Should Also Have A One-Nozzle Fixture on the Lavatory—

Surely persons who wish to *Bathe* in running water will also desire to *Wash* in running water.

You know from your own experience that it is almost impossible to wash comfortably under two faucets—one is usually too hot and the other too cold.

Speakman Unit and Unit-Acto lavatory fixtures have one nozzle which allows the temperature of the water to be regulated to exactly the desired degree.

Speakman one-nozzle lavatory fixtures have built into them the same quality that has made the national reputation of Speakman Showers. These lavatory fixtures fit practically all existing lavatories and can always be had on new lavatories.

Escutcheons and handles on Speakman lavatory fixtures harmonize perfectly with those on Speakman Showers—all are finest American-made china, extra heavy.

We'll be glad to send out Catalog H, showing Speakman lavatory fixtures and showers—the entire Speakman line is illustrated and described. This catalog has been made up loose-leaf for your files, size $10\frac{5}{8} \times 8\frac{1}{2}$ inches.

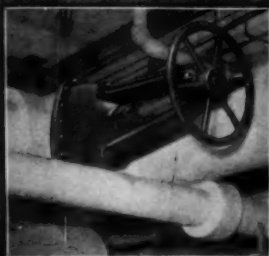


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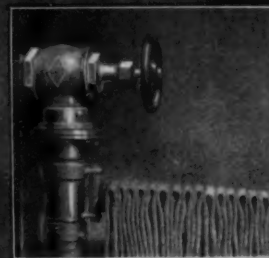
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AND FIXTURES



16-inch Jenkins Standard Iron Body Gate Valve, flanged, with rising spindle installed in the main steam line.



Jenkins Bronze Fire Line Valves are installed in all fire lines throughout the hotel.

THE ROOSEVELT

QUOTING the management, "The Roosevelt shall be first and last an agreeable 'other home' for every man, woman and child who enters its portals." And Jenkins Valves have a significant part in fulfilling this promise.

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Line Valves because they hold pressure without leakage, open quickly and do not stick or corrode at the seat.

Furthermore, Jenkins Valves, due to freedom from costly repairs and replacements, reduce maintenance costs, and this makes for bigger returns on hotel investments.

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Jenkins Valves on laundry wash wheels.



Three 16-inch Jenkins Standard Iron Body Gate Valves, flanged, with rising spindle installed in exhaust line.



Always marked with the "Diamond"

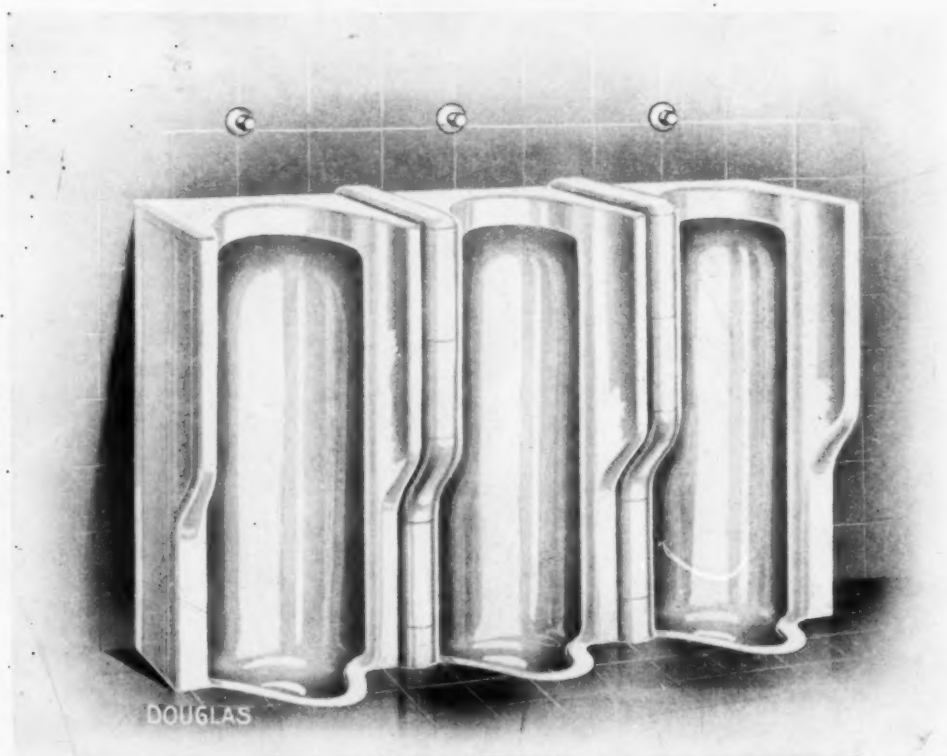
Jenkins Valves

SINCE 1864

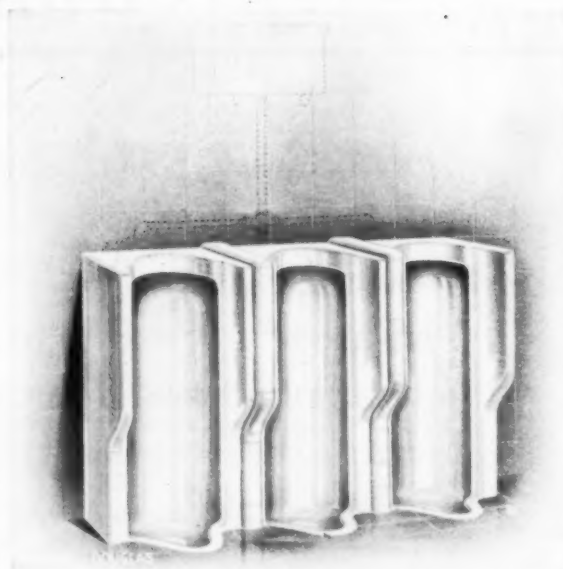
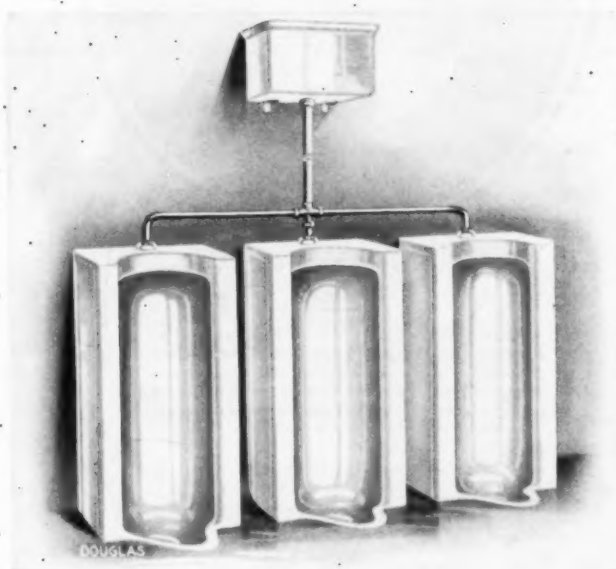
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"objets d'art"



**MADVAL
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is to be found in the
homes of men and
women whose discrim-
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assumed.



THOMAS MADDOCK'S SONS COMPANY
Trenton, New Jersey.

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EIGHT months after the plant was completed, the owner had forgotten all the careful, conscientious work of the architect.

For the concrete floor of his building had developed a number of crumbling weak spots. On trucking aisles and around doorways and machinery, there were deep hollows. In places the top surface had completely given way. The air was full of concrete dust—dust as harsh and sharp as fine emery.

One specification the architect had left open. It was only a seemingly unimportant detail—the choice of a floor hardener. Yet that detail was sufficient to offset months of conscientious work. For now it was necessary to hold up production and resurface the floor. That was the only thing the manufacturer remembered about the architect's work.

It is easy for an architect to make certain of turning out a concrete floor that will be lastingly dustproof and wearproof. The way to do that is to specify the oldest and best-proved floor hardener on the market. Its name is Lapidolith.

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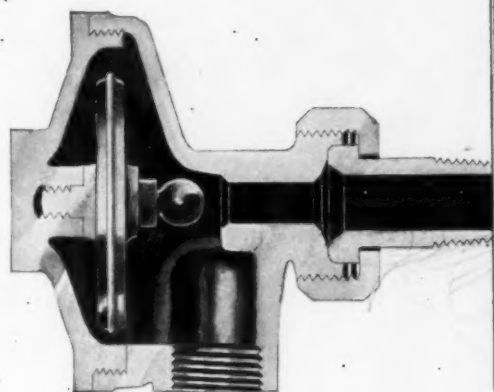
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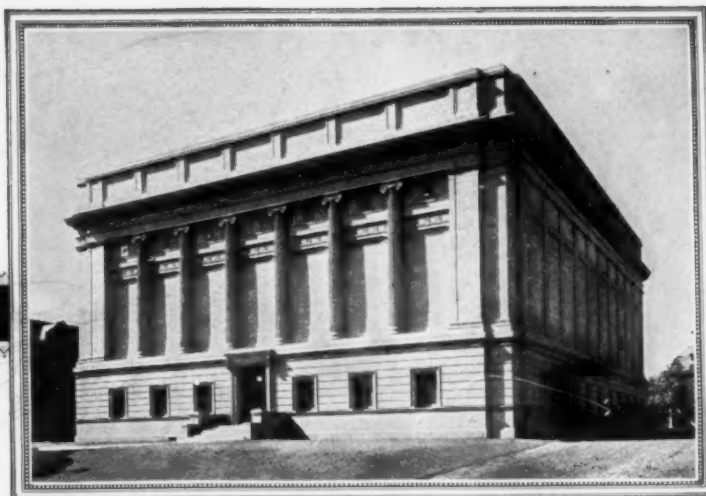
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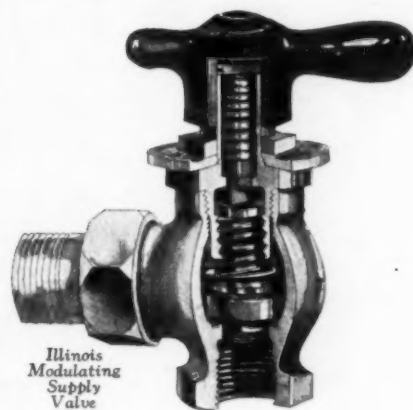
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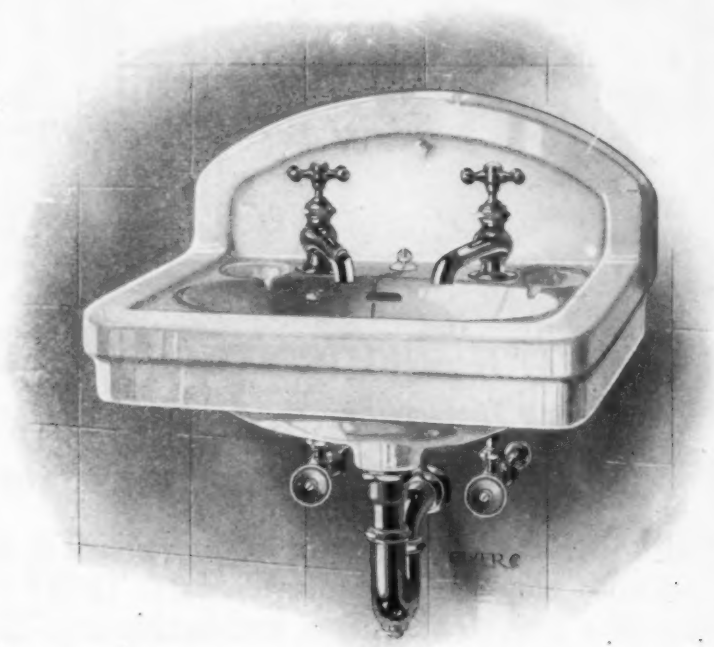
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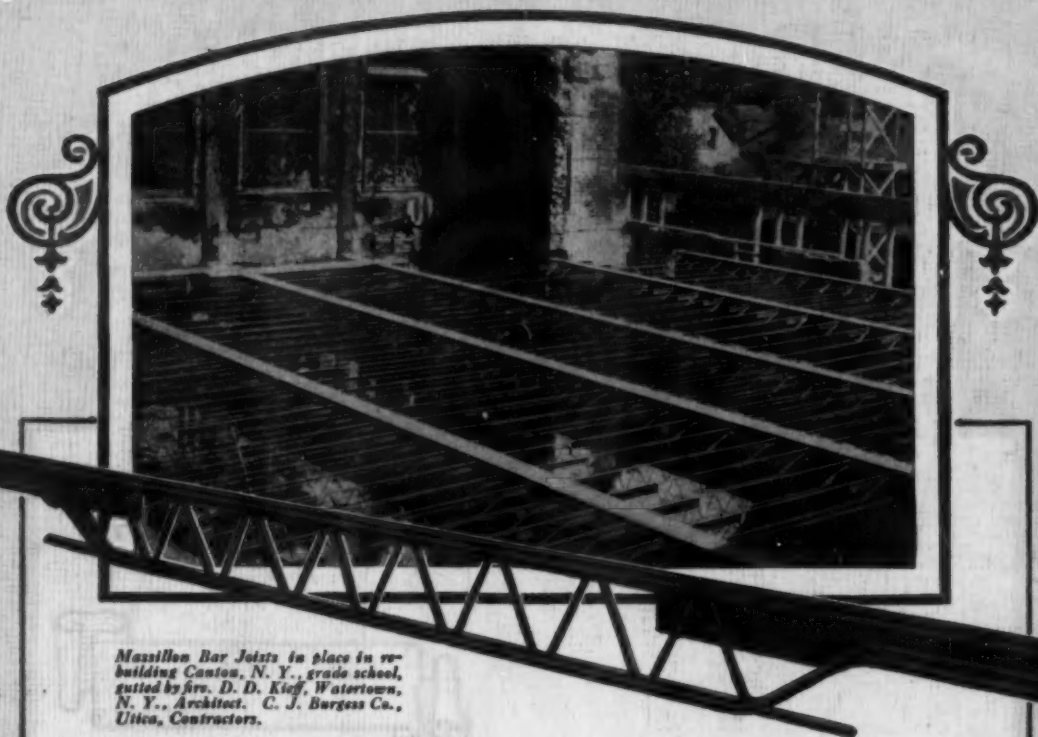
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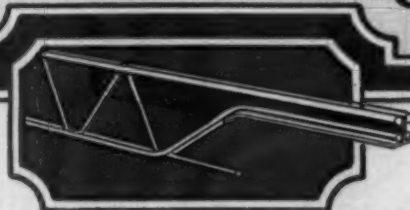
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